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BUSINESS WEEK



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"1942—The Year to Win or Lose"

—A Report to Executives

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Return of the Carbon Age

CARBON . . . one of Nature's oldest and most plentiful materials . . . is making possible some of industry's newest achievements.

In the chemical industry, massive black towers of carbon . . . erected in incredibly short periods of time . . . speed the delivery of vital acids. The all-carbon electrostatic precipitator, built of carbon from the bottom to the top of the stack . . . is now an actuality. Such towers can be erected in as little as a week's time! Staunchly immune to corrosion and thermal shock, they should last indefinitely.



Today . . . due to basic and applied research into the properties of carbon and graphite . . . it is possible to obtain the

black, wonder-working materials in such a variety of forms — blocks, bricks, beams, tubes, pipes, and fittings . . . even valves and pumps . . . that almost any size or shape structure can be built from them. For making tight joints, which give the structure uniform properties throughout, special carbon- and graphite-base cements have been developed.



Undisturbed by the torture of heat, carbon is also a "must" in the metallurgical industry. Carbon cannot be melted . . . will not soften . . . and has remarkable dimensional stability even at

candescant heat. In addition, it will not flake off and hot metal will stick to it. That is why it is ideal for such uses as molds, cores, and plugs . . . for the lining of furnaces . . . and for sampling dippers.



Because electric-furnace graphite conducts heat even better than most metals, it is becoming increasingly important in the manufacture of heat exchangers for the processing of corrosive liquids and gases.

These new uses for carbon and graphite . . . added to the almost interminable list of uses that existed before . . . make this truly a carbon age. Your inquiries are cordially invited.

The strides made in the development of structural carbon, and in the uses of other carbon and graphite products, are greatly facilitated by the technical assistance of other units of Union Carbide and Carbon Corporation including The Linde Air Products Company, Carbide and Carbon Chemicals Corporation, Electro Metallurgical Company, Haynes Steelite Company, and Union Carbide and Carbon Research Laboratories, Inc.—all of which collaborate with National Carbon Company in research into the properties and applications of carbon and graphite.

NATIONAL CARBON COMPANY, INC.
Unit of Union Carbide and Carbon Corporation



30 East 42nd Street

New York, N. Y.

This all-carbon electrostatic precipitator stands 55 feet, 2 inches high.

WASHINGTON BULLETIN

WHAT THE WASHINGTON NEWS MEANS TO MANAGEMENT

Military Buying—by Civilians

Military significance of the streamlining of the Army has temporarily obscured the far-reaching changes involved in Army procurement and production-control policy. Dictated by Donald M. Nelson, war production chief, these changes point straight toward creation of a central civilian agency for all war buying.

Within the new Service of Supply headed by Gen. Brehon B. Somervell, a division of procurement and distribution is being formed to set policy on all matters of Army buying and production, to review all contracts, to supervise design of Army equipment. It is headed by a recently-commissioned civilian and staffed almost entirely with civilians—men in their forties, drawn from industry, men who have established outstanding records in the civilian war production agencies.

• **Men from WPB Move Over**—It is especially significant that Douglas MacKeachie, WPB director of purchases, has been moved into the new Army organization. Although WPB will get a new purchases director, the clear intent is to groom this Army unit for a future job of centralized war procurement. Eventually, the new unit will be cut loose from the War Department. It will take over buying from the Navy (probably by merger with the similar outfit, BW—Feb. 7 '42, p. 7), headed by Admiral Samuel M. Robinson, the Maritime Commission, and other war agencies. This will involve absorption of many WPB functions, and WPB personnel is moving in ahead of the job.

Railroader Is Head Man

Director of the Army's new procurement and distribution division is Col. Charles D. Young, a reserve officer, vice-president in charge of purchases of the Pennsylvania Railroad, and recently in the Office of Defense Transportation. Young will be responsible, through Gen. Somervell, to Undersecretary Patterson. MacKeachie moves over from WPB to become deputy to Young.

Under these two men are an assistant in charge of production and an assistant in charge of purchases. Production man is Gen. T. J. Hayes. He is the only regular army officer in the setup, but associated with him as assistant is A. R. Glancy, Pontiac man who had charge of ordnance for the old Defense Commission and OPM. Since July, he has been in England. Albert J. Browning (BW—Feb. 7 '42,

p. 7) is assistant in charge of purchases. Browning is one of MacKeachie's men who moved over from WPB last month.

For the present, business men will have their day-by-day dealings with the same procurement officers as always, but they should soon feel the effects of civilian policy-setting upstairs.

Will Nelson Plan Backfire?

Washington is wondering whether Nelson pulled a smart one or headed for trouble when he assigned his push-production propaganda drive to "management-labor committees" in munitions plants. Intent was (1) to sell the scheme to labor, warding off the stretch-out label, and (2) divert the unions from their demand for a bigger voice in the management of industry (the Murray plan) to what Nelson considers their proper rôle—stimulation of the individual worker to greater effort.

It looks as if the plan might backfire. The unions have accepted it wholeheartedly. Now C.I.O. leaders, with a straight face, are publicly congratulating Nelson on having adopted the Murray scheme, are promising a flow of valuable ideas for improved handling of war work in the plants.

Nelson and Small Business

Rep. Wright Patman's Small Business Committee is walking out on him. Reason is that he's straying into paths which have nothing to do with the fix that war has put many small business men in. Patman went on the House floor this week to drum up trade, pleading with congressmen to present their views to his committee.

It's pretty plain now that Congress has about decided to let Nelson handle this hot potato. Nelson's policies will spread war work wider and wider. Government capital will be forthcoming to help small plants swing over.

• **Footnote**—For distributors and dealers of consumers' durable goods and other merchandise that runs out, nothing doing.

And None Too Soon

War plane production was not seriously held up because of the War Production Board's delay in giving the industry an A-1-a preference rating. But the outcome was more good luck than good management. Plane manufacturers had large stocks of most materials on hand. Moreover, the priorities system is not airtight. Many firms having pres-

tige and connections got what they wanted, "P" orders or not.

When a few shortages actually showed up, the industry turned on the heat with positive assurance that the public reaction would get results. Yet any further delay in granting the A-1-a would have meant plenty of trouble.

Belling the Credit Cat

In putting out its new regulations on instalment sales this week, the Federal Reserve by no means had mastered the problem of cutting down consumer credit. Some types of instalment buying are going to decline automatically—automobiles, refrigerators, radios, etc. But people can still borrow on time from personal finance companies to stock up on merchandise, despite a "purpose test" requiring them to certify that the loan won't be used to buy certain durable-goods items.

In recent months loans of personal finance companies have declined somewhat, but many government authorities would like very much to confine operations to births, deaths, and other family emergencies. However, the Office of Price Administration does not want to clamp down too hard on the theory that small-loan credit has its place in our society. In the past, top members of the OPA have been closely associated with the personal loan business and probably have a soft spot for it.

• **Their Backgrounds**—Leon Henderson and his assistants, John Hamm and Rolf Nugent, were all formerly with the Russell Sage Foundation, which fostered the fight of personal loan companies against loan sharks. And F. B. Hubachek, who is in charge of consumer credit at OPA, is associated with the Chicago law firm of Hubachek & Kelly, which has represented Household Finance Co., one of the two largest personal finance companies.

Wickard vs. Henderson

Secretary Wickard, still hankering to take over the whole food supply job, is tiffing with Henderson again. He's trying to embarrass the Price Administrator by pushing him into a hurry-up rationing of canned goods and other foods. Wickard's argument is that slapping on price ceilings without rationing simply makes for hoarding. Henderson is shying off, says he hasn't got the organization. Wickard boasts that he's got one—the Agricultural Marketing Administration.

Now buying huge quantities of food

MULTIPLE CUTS SPEED WAR PRODUCTION



120,000 tank program will be realized! Modern production methods have given the answer to — "how?" Take a case in point, the cutting of tank drive sprockets by an Airco flame cutting machine as illustrated above. Every 20 minutes four are cut simultaneously.

The oxyacetylene flame is a cutting tool that never loses its cutting edge. It gives industry new mass production methods that are meeting the fantastic demands of modern mechanized war.

New, faster, better ways of making guns, planes, ships, engines and ma-

chines result from using the oxyacetylene flame. It's a versatile production tool. In addition to cutting metal, it hardens steel to an easily controllable depth . . . cleans metal surfaces for longer lasting paint jobs . . . welds metal into a strong, permanent unit . . . gouges metal with amazing speed.

Air Reduction's nationwide engineering and research facilities are anxious to help American industry obtain and maintain maximum war production. Can we help you?



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In Texas:
Magnolia-Airco Gas Products Co.
General Offices: HOUSTON, TEXAS
OFFICES IN ALL PRINCIPAL CITIES

ANYTHING AND EVERYTHING FOR GAS WELDING OR CUTTING AND ARC WELDING

WASHINGTON BULLETIN (Continued)

for domestic and lend-lease consumption, AMA is ambitious to take over Army and Navy food buying.

Lid on Pork Prices

Another price-fixing order that brings the Office of Price Administration very close to the consumer (BW-Mar. 7 '42, p15) came this week when Leon Henderson clamped a lid on 90% of the country's pork products. The ceiling is based on prices prevailing between Mar. 3 and Mar. 7, goes into effect Mar. 23. It applies to everybody from the packer down to, but not including, the retailer.

This put Henderson into the farm-price rumpus with both feet—but he picked rather carefully the spot into which he jumped. Hog and pork prices in the base period were within striking distance of the tops for the last 15 years; so farmers shouldn't be too much upset by the order.

Packers express no real opposition to the order, but they wonder exactly how it can be effectively enforced (page 60). Moreover, with Henderson promising a retail crackdown if the present controls don't protect consumers, there's a real headache in the making.

Sugar Row

The air is blue in WPB's Food Supply Branch. Sugar, chronic troublemaker, is the cause of the row.

Sugar men in the food branch claim the commodity should rate a branch of its own. They even go so far as to propose that sugar should be placed in the hands of an independent government board because everybody and his brother are always sticking their fingers into it.

The investigations into the handling of sugar, now heading up on Capitol Hill (BW-Mar. 7 '42, p18), are cited to support creation of a board fairly representative of all government agencies concerned with the product.

Battle of the Wordsmiths

Washington's fast-growing propaganda agencies are hiring media and advertising personnel hand over fist to cement their relations with these powerful contactors of the public. So far they haven't established liaison among themselves—are, in fact, turning propaganda against each other.

Jockeying for control of radio propaganda are Archibald MacLeish's Office of Facts and Figures, Nelson Rockefeller's Office of Inter-American Affairs, and Bill Donovan's Office of Coordinator of Information.

The nod will come from the White House.

Ether for MacLeish?

Latest advertising executive to join in Washington propaganda din is Seymour Morris of Compton Advertising, Inc., New York. Morris becomes MacLeish's agency and network contact man. OFF apparently is leading the race to become No. 1 administrator of broadcast time, advocating a clearing-house operation.

Donovan's outfit wants to underwrite operation of all short-wave stations beamed at foreign countries and is rowing with Rockefeller's office, which wants to organize one big company, either private or government-owned, to run all shortwave.

Roosevelt and his Budget Bureau will decide what happens to short-wave radio operation. Rockefeller's Inter-American

Affairs office has just revamped its radio setup. Don Francisco, former president of Lord & Thomas, gets a post paralleling that of John Hay Whitney, heading the movie division, and Francis A. Jamieson, of the press division. Francisco's former Communications Division disappears. N. H. Aylesworth, one-time head of NBC, who was radio director under Francisco, becomes a special assistant to Rockefeller.

Sorting the Selectees

When Secretary Stimson indicated last week that draftees would be inducted from the new pool of registrants (created by last month's registration of the 20-21 and 36-44 age groups) simultaneously with induction of men from

Reed's New Industry Setup

When Philip D. Reed, General Electric's board chairman on leave, was named head of the Bureau of Industry Branches in WPB's Division of Industry Operations several



branches of which it is composed are the official point of contact between the War Production Board and the advisory committees representing the industries involved (BW-Feb. 21 '42, p84). When WPB succeeded SPAB and OPM in January, there were 15 industry branches, many of which represented groups of industries. Reed's plan to establish branches for all important industries matured this week in the expansion of the original 15 to 24.

Except for a sprinkling of government officials and college professors, the chiefs of these branches are men from the industries for which they are the focal point. Nelson's policy as war production chief is to place responsibility and equivalent authority in the hands of industrial executives who know the business inside out and talk the same language. Their jobs are good so long as they deliver, as long as they don't permit the interest of private connections to interfere with their work in Washington. Each has been told to "assist the industry assigned to him in every phase of its production program, including conversion, financing of new or expanded facilities, problems of labor supply, and procurement of materials and equipment."

In the defunct OPM, confusion reigned because there was no clear definition of duties or authority. In WPB the Industry Branch chief's "line of authority" is from the WPB chairman (Nelson), through the Director of Industry Operations (Knowlson), through the chief of the Bureau of Industry Branches (Reed).

The brunt of this job falls on Reed's bureau because the industry

STEAM Heats America

Producing heat is only part of the heating job. Putting heat where you want it, when you want it is the big job—the job modern Steam Heating does best. See fact story below. For details write Warren Webster & Company, Camden, New Jersey.

SAVE 137 TONS OF COAL YEARLY WITH MODERN STEAM HEAT

Webster Moderator System Helps Columbus, O., Y.M.C.A. to Get Comfort at Moderate Cost

7 YEARS OF HEATING ECONOMY
Steam Distribution Problem is Solved as all Sections of Building Heat Evenly

Columbus, O.—A 7-year record of heating system performance in the Columbus Y.M.C.A. shows the comfort and economy achieved with a Webster Moderator System of Steam Heating.

Marshall Murray, Chief Engineer and Bldg. Superintendent



Y.M.C.A. Building, Columbus, O.

Coal consumption in the stoker-fired boiler plant has been reduced an average of 137 tons a year. The coal savings follow:

1935	148 tons
1936	96 tons
1937	143 tons
1938	190 tons
1939	143 tons
1940	38 tons
1941	199 tons

Marshall Murray, chief engineer and building superintendent, says:

"We have 741 radiators in our modern Association building. Formerly, we had a heat distribution problem. One section of the building would be comfortably heated and another too warm."

"With the Webster Moderator System, steam is delivered to all radiators at the same time and in proportion to the need for heat. We are getting the comfort of modern steam heat distribution at a cost surprisingly low."

WASHINGTON BULLETIN (Continued)

the previously existing pool, he was discussing only one of several possibilities. For the present, Selective Service is going ahead on the basis that the new registrants will not be called until the original pool is exhausted. By next June, when classification is complete, a decision will have to be made.

Basic question will be whether the Army shall snatch immediately at the youngsters (and be left at the end of a long war with nothing but oldsters to tap) or content itself with a cross-section of age groups.

• **Watching the Navy**—One motive behind discussion now of schemes to ring in the youngsters right away is to put pressure on the Navy to get its men through Selective Service. Voluntary enlistment is giving the Navy the cream of the youth, to Army's annoyance. But Army could set Navy on its heels any time by drafting all the young fellows.

Building War-Labor Pool

Selective Service is being pushed as a suitable agency to handle the labor-allocation job. One device would be to split up the 3-A deferments into 3-A, 3-B, etc., depending on the man's job. To be sure of deferment, a man would need both dependence and an essential job. This would force the store clerks into the factories.

Inland Road to Alaska

The Alaskan highway will be built as a two-stage proposition. U. S. Engineer troops are working at the southern end and at an intermediate point on a "pioneer" road—narrow, unpaved, and barely passable, but quick to build. Subsequently, Congress will be asked to give the Public Roads Administration some \$25,000,000 to build a permanent two-lane, lightly paved road. Equipment for this job can be brought in over the pioneer road.

Choice of the route—well to the east of those discussed in the past—is intended to keep away from the vulnerable seacoast and also to connect with a chain of existing airfields.

Ickes and Alcoa Again

Secretary Ickes is using his grip on Bonneville power to keep veto authority over any postwar sale by Defense Plant Corp. of the aluminum plant which DPC is financing for Aluminum Co. of America operation at Troutdale, Ore.

The contract between DPC and Bonneville for the 97,500 kw. needed to operate the plant, announced this week, contains a clause committing the Bonneville administrator to continue

the deal (in the event that DPC sells its plant) only if the buyer is "deemed by the administrator to be satisfactory as a purchaser of power."

• **Squeeze Play?**—Ickes last year decreed Alcoa was to get no more Bonneville power. He has made no secret of his feud with Jesse Jones over the latter's "hiring" of Alcoa to run Troutdale and other DPC aluminum plants instead of making them government-operated, preferably by the Interior Department. Alcoa, as wartime operator, would be the most likely customer for postwar purchase of the works—but not without Bonneville power.

Simplification's Progress

Washington's much-discussed simplification program is making time under the impetus of wartime necessity. In the beginning, simplification was voluntary; now WPB is applying pressure.

Some recent moves include an order (L-42), simplifying plumbing and heating supplies and ordering manufacturers to conform to the Bureau of Standards recommendations, and preparation of similar orders on cement, limiting production to five (or maybe even three) formulas, and on reinforcing bars and steel shapes.

The priorities system is being used to do the same job in buying. Applications for priority aid in purchase of odd-sized items are turned down, applicants told to use standard goods.

Capital Gains (and Losses)

John G. Winant, Ambassador to Britain, may be the compromise Secretary of Labor to head the long overdue manpower mobilization. Yet everybody with a leg to stand on is mentioned as Madam Perkins's successor.

Roosevelt has asked all government agencies in Washington and afield to cut down on use of electricity and has suggested that civilians should follow. Trouble is kilowatt hours saved today can't be bottled and stored until they're needed.

WPB's new industry branches include one for beverages and tobacco. It was promptly dubbed the Minor Vices Branch.

Safe and sane will be the motto this coming Fourth of July for sure. Under authority of the Explosives Control Act, the Bureau of Mines has banned manufacture and sale of firecrackers and "torpedoes" and is limiting the size of other fireworks. Any seller of fireworks must have a federal license.

—Business Week's Washington Bureau

FIGURES OF THE WEEK

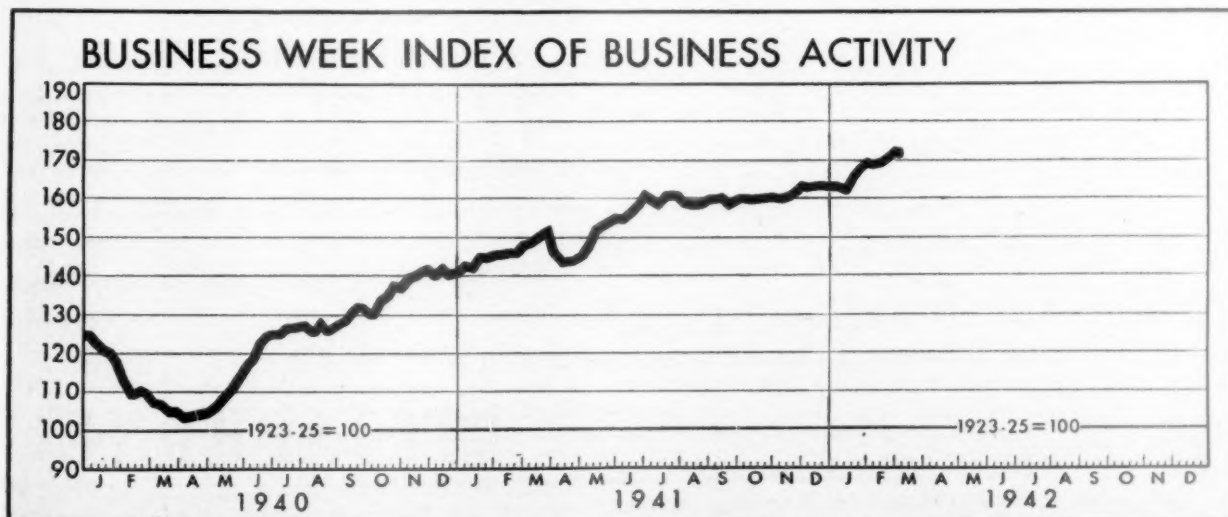
	§ Latest Week	Preceding Week	Month Ago	6 Months Ago	Year Ago
THE INDEX (see chart below)	*173.0	†173.5	170.1	160.7	149.6
PRODUCTION					
Steel Ingot Operations (% of capacity)	97.4	97.2	95.5	96.9	98.8
Automobile Production	24,455	30,085	37,125	32,940	125,915
Engineering Const. Awards (Eng. News-Rec. 4-week daily av. in thousands)	\$29,432	\$28,142	\$25,638	\$18,865	\$20,952
Electric Power Output (million kilowatt-hours)	3,392	3,410	3,475	3,133	3,005
Crude Oil (daily average, 1,000 bbls.)	3,934	4,016	4,337	3,815	3,633
Bituminous Coal (daily average, 1,000 tons)	1,862	1,833	1,866	1,829	1,810
TRADE					
Miscellaneous and L.C.L. Carloadings (daily average, 1,000 cars)	83	83	87	91	81
All Other Carloadings (daily average, 1,000 cars)	47	46	49	61	45
Check Payments (outside N. Y. City, millions)	\$6,732	\$5,527	\$6,286	\$5,020	\$5,620
Money in Circulation (Wednesday series, millions)	\$11,518	\$11,422	\$11,231	\$10,034	\$8,805
Department Store Sales (change from same week of preceding year)	+18%	+25%	+29%	+30%	+5%
Business Failures (Dun & Bradstreet, number)	263	215	241	145	241
PRICES (Average for the week)					
Spot Commodity Index (Moody's, Dec. 31, 1931 = 100)	229.2	228.5	226.6	218.0	178.0
Industrial Raw Materials (U. S. Bureau of Labor Statistics, Aug., 1939 = 100)	153.8	153.3	153.5	145.3	128.1
Domestic Farm Products (U. S. Bureau of Labor Statistics, Aug., 1939 = 100)	181.5	180.5	179.6	162.9	127.6
‡Finished Steel Composite (Steel, ton)	\$56.73	\$56.73	\$56.73	\$56.73	\$56.73
‡Scrap Steel Composite (Iron Age, ton)	\$19.17	\$19.17	\$19.17	\$19.17	\$20.33
‡Copper (electrolytic, Connecticut Valley, lb.)	12.000¢	12.000¢	12.000¢	12.000¢	12.013¢
Wheat (No. 2, hard winter, Kansas City, bu.)	\$1.23	\$1.24	\$1.23	\$1.12	\$0.80
‡Sugar (raw, delivered New York, lb.)	3.74¢	3.74¢	3.74¢	3.50¢	3.20¢
Cotton (middling, ten designated markets, lb.)	19.31¢	19.34¢	19.19¢	17.37¢	10.43¢
‡Wool Tops (New York, lb.)	\$1.294	\$1.281	\$1.297	\$1.315	\$1.298
‡Rubber (ribbed smoked sheets, New York, lb.)	22.50¢	22.50¢	22.50¢	22.50¢	21.64¢
FINANCE					
90 Stocks, Price Index (Standard & Poor's Corp.)	65.6	67.9	69.7	81.1	79.3
Medium Grade Corporate Bond Yield (30 Baa issues, Moody's)	4.31%	4.30%	4.28%	4.27%	4.40%
U. S. Bond Yield (average of all issues due or callable after twelve years)	2.05%	2.10%	2.05%	1.91%	2.05%
U. S. Treasury 3-to-5-year Note Yield	0.43%	0.44%	0.45%	0.31%	0.52%
Call Loans Renewal Rate, N. Y. Stock Exchange (daily average)	1.00%	1.00%	1.00%	1.00%	1.00%
Prime Commercial Paper, 4-to-6-months, N. Y. City (prevailing rate)	‡%	‡%	‡%	‡%	‡-‡%
BANKING (Millions of dollars)					
Demand Deposits Adjusted, reporting member banks	24,815	24,712	24,457	24,349	23,362
Total Loans and Investments, reporting member banks	30,918	30,943	30,355	29,238	26,668
Commercial and Agricultural Loans, reporting member banks	6,902	6,902	6,785	6,222	5,287
Securities Loans, reporting member banks	870	881	835	1,043	957
U. S. Gov't and Gov't Guaranteed Obligations Held, reporting member banks	15,874	15,855	15,431	14,567	13,232
Other Securities Held, reporting member banks	3,670	3,696	3,683	3,768	3,844
Excess Reserves, all member banks (Wednesday series)	3,210	2,880	3,326	4,857	6,435
Total Federal Reserve Credit Outstanding (Wednesday series)	2,402	2,392	2,316	2,241	2,237

*Preliminary, week ended March 7th.

† Revised.

§ Date for "Latest Week" on each series on request.

‡ Ceiling fixed by government.



A straight announcement of importance to Businessmen



WE AMERICANS are learning how to make our automobiles and radios last longer, how to conserve on fuel and food, how to extend the life of tires and overshoes. What was once a matter of pure common-sense thrift is now in addition a matter of patriotic urgency.

The need to save what we have is particularly vital in the conservation of Dictaphone dictating equipment.

On a thousand fronts of wartime business, the Dictaphone method is daily pushing through the specifications and orders essential to America's all-out war effort. It is helping key men keep ahead of almost incredible volumes of essential work—doubling their ability to get things done, *fast!*

The demand for these dictating machines is such that we must ask businessmen to apply to them the same sound principles of conservation they are adopting toward scarce items of their personal use.

To that end, we offer this simple 3-point program:

1. *Make your present Dictaphone equipment last for the duration.*
2. *Make your Dictaphone serve you best by maintaining it at full efficiency. Investigate the Dictaphone Maintenance Program.*
3. *If war conditions have reduced your business activity so that your Dictaphone should be released for use in direct war effort, ask about Dictaphone Relocation Service.*

To extend the life of your present Dictaphone equipment and assure its maximum usefulness, we recommend the Dictaphone Maintenance Program.

For a nominal charge, an expert Dictaphone technician under direct factory supervision will inspect your machine regularly each month, see that it is properly lubricated and make sure that its many moving parts are properly adjusted. Each monthly inspection guarantees thirty days of efficient, uninterrupted service. Emergency calls, if made necessary, by accident, fire, or any other cause, are made without any extra charge.

Remember that dictating machines, like other precision instruments, require expert care and servicing to keep them operating perfectly. Because Dictaphone equipment may be giving you satisfaction even when it needs attention, you and your secretary may be handicapping yourselves without knowing it.

- For further information about the Maintenance Program or the Relocation Service, look up Dictaphone Corporation in your local telephone directory, or write or wire us direct. Dictaphone Corporation, 420 Lexington Avenue, New York City.

DICTAPHONE

The word DICTAPHONE is the Registered Trade-Mark of Dictaphone Corporation, Makers of Dictating Machines and Accessories to which said Trade-Mark is Applied

THE OUTLOOK

Can We Win? And How Soon?

Impending test of armed strength overshadows all other business considerations. Meanwhile, WPB bears down in production drive, and labor shunts price problem from OPA to NWLB.

Spring is approaching. And Russia is thawing, Germany preparing, and Japan consolidating. Those are the immediate—and crucial—considerations that business men have to deal with. For today war is America's business; and the movements of armies as well as the speed of production lines in the months ahead will determine not only the outcome of the Second World War, but also its length. For 1942 is the year in which the United Nations must either win or lose (special report, page 33).

Taxes, Wages, Prices

That fact this week overshadowed such purely domestic developments as the course of the tax bill (page 14); the War Production Board's order to industry calling for monthly reports on conversion to arms work; the insistent demands of labor for wage boosts in such a diversified group of industries as steel (page 84), automobiles, textiles, aluminum, and men's clothing; the Office of Price Administration's ceiling on pork prices (page 7), as part of its fight to curb inflation; passage in the House of a bill authorizing an increase in the federal debt limit to \$125,000,000,000, which should take care—for this year, at least—of the war costs; and, finally, the continued decline in the stock market (chart, page 92).

Test of U. S. Troops

Transcending all else in the business outlook is the further fact that sometime this year—perhaps sooner than expected—American troops will get a major test in modern combat, either in Europe or the Far East, or both. So far, our forces have participated in rather limited land operations, and those primarily defensive. But with Japan's position in the Indies being steadily expanded and consolidated, with Germany getting set for an assault against Russia and the Near East, an offensive diversion may become strategically necessary for the United Nations.

Such an offensive might mean large-scale use of American troops. And then, for the first time, this nation would obtain a measure of whether the Army has mastered the technique of modern attack warfare, embracing the simultaneous use of air, tank, and infantry forces. And that test, more than anything else,

will provide an answer to these critical questions: Can we win? And how soon?

The recent shakeups in the high commands in Washington perhaps foreshadow a shift to offensive tactics. This week Admiral King, already chief of the United States fleet, took over the post of chief of naval operations. This centralization of control followed hard upon the previous week's realignment of the Army's general staff into three main divisions—air forces, ground forces, and supply—reporting to Chief of Staff Marshall. Throughout, air officers were given more prominent posts. King, for instance, is an aviator.

Meanwhile, on the production front, the WPB is putting the screws on; it is not trusting to enthusiasm alone.

The order to industry to report monthly on conversion to war work indicates as much. If companies have to make out written statements on their progress, they are bound to "step on it" to make a good showing.

Similarly, War Production Chief Nelson has called on labor and management groups in industry to report by Apr. 1 on just how far they have gone in establishing joint committees to speed up production. Here again, Nelson is getting down to cases.

Tough Nut for Labor Board

The problem of price stabilization and inflation control has been taken—at least temporarily—out of Leon Henderson's hands. What the National War Labor Board decides on the Steel Workers Organizing Committee's request for a dollar-a-day boost in Little Steel plants is bound to influence the immediate price trend. And NWLB is in a tough spot on two counts:

(1) The independent union in the Weirton Steel plant at Weirton has topped S.W.O.C.'s demand by 25¢, in-

IN THE OUTLOOK:
CONTRAST IN RETAIL SALES



That a war economy turns consumer buying habits topsy-turvy is now readily discernible. Customarily, when buying power is rising, people go in for purchases of durable consumer goods—autos, refrigerators, radios, vacuum cleaners, etc. And during the forepart of 1941 that is just what happened, with non-durable-goods sales tagging behind. But last fall, the pattern shifted. As automobile produc-

tion declined and then later as auto and tire allocations were put into effect, sales of durable goods fell off sharply. But sales of non-durable goods—food, clothing, etc.—continued to increase. Now they are at a new high, while durable-goods sales are actually below a year ago. The inference is clear: money which normally would be spent for durable goods is going into non-durable purchases.

timating that it will be granted the increase if the Labor Board does not say "No." This, of course, sets all labor—and steel workers particularly—on edge, implying, as it does, that the industry can afford the boost.

(2) An increase in steel wages probably would lead to an increase in steel prices. Yet such price increases would not raise the level of the cost of living, for most of the steel that is now being produced is going into armaments or arms plants, not to the ultimate consumer.

Thus, the Labor Board cannot well take the position that a full dollar-a-day wage boost will raise living costs. Its line of reasoning will have to be more circuitous: that a major wage boost in steel would upset the prevailing wage relationships existing throughout industry and thereby would stimulate demands for increases elsewhere, and these latter increases would spread to the cost of living.

Critical Issue

What makes the labor-price question so critical now is that numerous wage contracts are up for negotiation during the spring months. This coming week the Textile Workers' Union is opening negotiations with cotton and rayon manufacturers, and—in keeping with the times—is seeking a boost. Indeed, it is possible that the union may ask OPA to raise textile ceilings in order to permit mills to raise pay. If that happened, you would have the case of one labor group's lowering the purchasing power of all other consumers in order to improve its own purchasing power, through the price advance.

Incidentally, retail sales will probably take a sudden, though temporary, drop. Reason: March 16—"Tax Monday."

That New Tax Bill

Bloc wants sales levy to ease income burden. Another fight will be over Treasury plan to collect in advance via payrolls.

"Too much, too soon" is the congressional verdict on the Treasury's proposed \$7,610,000,000 tax boost. Tax leaders in both House and Senate prefer to trim the bill to \$5,000,000,000 by scaling down the individual and corporate income rates suggested by Secretary Morgenthau.

• **Nothing in a Hurry**—If precedent is any guide—and it still is for Congress—the labor of bringing forth the final tax bill will take months. Secretary Morgenthau won't get any kind of a bill by July 1, as he'd like, unless casualty lists bring home the price of war.

Sales-tax advocates will fight hard for some kind of general tax on sales, either at retail or at the manufacturers' level. Behind them will be business and middle-class interests with influential newspaper support. Their argument is that the biggest share of the increase in national income has accrued to the low-income wage-earning group, which is barely scratched by present income taxes (page 96).

• **Administration's Stand**—The Administration will continue to fight any kind of a sales tax on the ground that the low-income group is already paying its full share of taxes.

Net effect of the sales-tax drive may be a lowering of tax rates on the middle- and higher-income brackets accompanied by a reduction in personal exemptions to catch the low incomes. Such finag-

ling would produce a few million more income taxpayers, little if any additional net revenue.

• **Advance Collection**—The next biggest fight will be over Morgenthau's request for authority to begin collecting the 1942 income tax on or after July 1 by withholding a percentage of wages and salaries. The applicable rate would vary at the Treasury's discretion from 1% to 10% of income, after allowing for personal exemptions.

Congress not only gags at the idea of giving the executive branch any discretion in tax matters, but also at the prospect of the double taxation involved: part of the 1942 income tax would be collected simultaneously with the last half of 1941 taxes. Morgenthau may get a flat rate much lower than the maximum of 10% requested.

• **Compulsory Borrowing**—Many congressmen like the idea, however, of compulsory borrowing by withholding a percentage of wages and salaries. To this Morgenthau is opposed. He wants to sell bonds on the voluntary payroll deduction scheme until the plan at least has had a fair trial.

As for corporation taxes, the Treasury deliberately refrained from stirring up the controversy that has snarled the last two tax bills. It did not again press for a change in the excess-profits tax base to a straight capital-invested basis.

• **Alternatives**—Proposed instead were sharp increases in surtax and excess-profits rates, coupled with relief provisions making them somewhat easier to take. Corporations whose surtax net income proves to be less than the average for the base period 1936-39 were allowed a tax credit of 10% of the difference but not to exceed 20% of the surtax net income.

This provision will help priority-starved businesses. The Treasury has also suggested that, when total corporation taxes exceed 80%, the excess be set up in a special account to be returned to the corporation sometime after the war for expenditure on capital equipment or on the employment of additional labor.

• **Surtax Issue**—In principle, the Treasury's corporate-tax proposals are acceptable to Congress, but a determined effort will be made to reduce the proposed surtax of 31% which would replace the present 6%-7% rate. With the proposed surtax of 31% and the unchanged normal tax of 24%, the basic tax on corporations would be 55%. If the entire bill is scaled down to \$5,000,000,000, the surtax rate will probably be reduced somewhat.

As for the excess-profits tax provisions, there may be an effort to go farther than the Treasury suggested. The Treasury will fight any move to make war producers as a class pay more than nonwar producers. Congress will not accept any of the Treasury's proposals meekly.



STARTING POINT

When completed, the \$600,000 Information Center in Washington will serve as a super-service station for

strangers with official business. It is a brainchild of the President, who says he feels sorry for business men who spend long hours traveling from one information desk to another.

Getting the Bad News on Rubber

Nation's tire-users now have an official warning, with the admission that turning out enough synthetic would be a near miracle, even though cost of production no longer counts.

Not a pound of new rubber is in sight for new tires or for recapping those which are now on the ordinary civilian's automobile.

It's Leon Henderson talking—Henderson of the War Production Board; Henderson, director of WPB's Civilian Supply Division; Henderson, the Price Administrator in charge of rationing. It's Henderson talking in "all capacities" to the Senate committee headed by Truman of Missouri, the group which keeps probing into the progress—or lack of it—in the war production program.

• **Telling the Country**—The Senate caucus room was a stage set to convince the owners of 28,000,000 autos that they are out of luck. Henderson previously had told the bad news to the Truman committee in secret session, that despite the freezing of tires and rationing them only to essential civilian uses, rubber supplies would actually run out a year from now if consumption wasn't further curtailed.

Everybody had known for some time that the situation was tough, but Jesse Jones had been making vaguely optimistic statements about synthetic rubber. People had heard a lot about getting rubber from guayule, dandelions, milkweed, and old boots. Consequently, many didn't really believe that the ban on tires would last indefinitely.

• **Jones behind Doors**—Jesse Jones, induced to talk to the Truman committee at its secret session, backed out of previous soothing statements concerning synthetic rubber. There's reason to believe, too, that he gave the committee some persuasive reasons why he's not responsible for the long stalemate in the synthetic program. But the public had already decided that Jones was to blame for the tire shortage and he didn't testify at the public hearing. He was there, though, impassively chewing gum, sitting on the committee's side of the table, facing Henderson as the rationing boss revealed the sorry picture.

Henderson submitted estimates which put production of synthetic rubber at 25,000 tons this year, 300,000 tons next year and double that in 1944.

• **"A Miracle" Needed**—But he discounted his own figures:

"Frankly, I believe that it will almost require a miracle to secure that amount of synthetic rubber. If the miracle doesn't occur, if the synthetic rubber plants aren't completed on schedule, our situation will be immeasurably worse."

The Price Administrator offered no explanation of the long delay in setting up synthetic production. (Several months ago he referred to the synthetic program as "still a gleam in Jesse Jones' eye.") Doubtless it had been agreed that any recriminations would be in bad taste at a session arranged to bring home to the public the gravity of the rubber situation.

• **A Matter of History**—Jesse Jones is no longer responsible for promotion of the synthetic-rubber program. Donald Nelson has taken it out of his hands, but had things gone differently 18 months ago, when Jones had this program in his own lap, Henderson might have had a more cheerful story to tell.

Speedy production of a huge supply of synthetic rubber is no cinch. Commercial production of synthetic last year totaled only 12,000 tons. The 300,000-ton goal for 1943 and 600,000-ton goal for 1944 announced by Henderson are still on paper. This represents a practical doubling of the program now under way, to which he assigned an output of 165,000 tons next year and 362,000 tons in 1944.

• **1940 Point of View**—The present program had very small beginnings. Back in August, 1940, the Defense Commis-

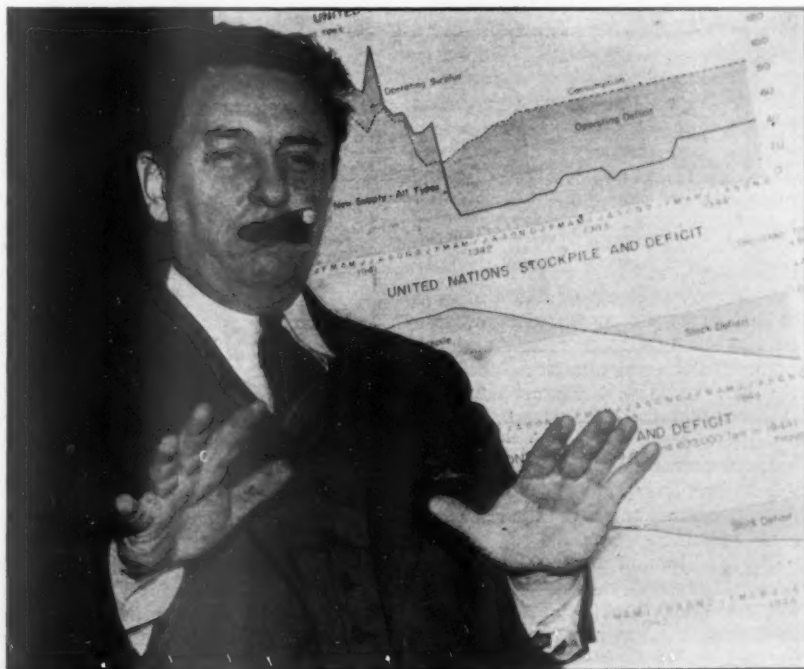
sion asked interested companies how much production of synthetic rubber they were willing to undertake, assuming that Jesse Jones would buy it at a price that would reimburse them for development costs. The total was a little over 100,000 tons. The commission submitted this proposal to Jones. It stopped right there. Jones said companies could go ahead on their own if they wished.

Rubber consumption in 1940 totaled 648,500 tons, but in February, 1941 Jones was saying that he didn't see the necessity for any big expansion unless developments in the Far East shut off the supply of crude.

• **Plants Sponsored by DPC**—Four months later (BW—May 24 '41, p. 28) Jones announced that Defense Plant Corp. would back four plants, each with an initial capacity of 2,500 tons but capable of expansion to 10,000 tons when needed. The DPC plants are being built and operated by Goodyear Tire & Rubber, Hydrocarbon Chemical & Rubber (jointly owned by B. F. Goodrich and Phillips Petroleum), Firestone and U. S. Rubber.

Last fall the projected capacity of the four plants was raised to 10,000 each, and after Pearl Harbor to 30,000 tons each. These plants are getting into partial production, but Henderson figures total output of synthetic this year at 25,000 tons.

• **Setting New Goals**—In January, Jones announced that the synthetic program would be jumped to 400,000 tons. First he promised production of this amount by June, 1943; then by De-



Leon Henderson's hands, his cigar, and his wall chart on the rubber situation all seem to tell the world, "That's all there is; there isn't any more."

ember, 1943. WPB's new goals for actual delivery of 300,000 tons in 1943 and 600,000 in 1944 will encounter tremendous difficulty in obtaining materials and equipment.

The plants themselves represent only the last step in the manufacture of this product—the polymerization of butadiene, which is the base of general purpose or "tire" rubber. Synthetic rubber of the butadiene type was not produced in this country until 1940. The rubber may be of two types—Buna N, which is made from butadiene and acrylonitrile, and Buna S, a copolymer of butadiene and styrene (BW—Jan. 15 '40, p42).

• **Buna S vs. Buna N**—Technologists argue the comparative merits of the two types. Buna S apparently can be made more speedily and economically than Buna N. For tire manufacture, N offers a longer-wearing tread, S a better carcass. WPB's production program is confined at present to Buna S, but with a plentiful supply of either we'd be much better off than we are now.

The bottleneck is butadiene. This may be obtained from alcohol, from petroleum byproduct gases, and directly from petroleum. For the first 200,000 tons of synthetic-rubber capacity, WPB expects to get the butadiene from the chemical industry, largely via alcohol. For the rest it will tap the petroleum industry.

• **Present Producers**—Butadiene is now being made by Standard Oil of Louisiana, Carbide & Carbon Chemicals, Dow Chemical, Shell Chemical, Ugite Sales, Monsanto Chemical, Universal Oil Products, and several other oil and chemical companies or subsidiaries.

Henry Kaiser, entrepreneur of government-financed magnesium and steel enterprises, has bounced into the synthetic-rubber program. According to unofficial reports, the Defense Plant Corp. is backing him on two 15,000-ton butadiene plants and one 10,000-ton styrene plant, to be operated in conjunction with Union Oil Co.

• **100-Octane Program**—Petroleum Coordinator Ickes' staff is setting up its 100-octane gasoline production program to include ethylene, butylene and toluene, as a much more speedy and economical means of obtaining butadiene than by building separate plants for this purpose. Cost is no factor now.

Oil companies which are going into butadiene manufacture don't want to stop there. They want to follow through to the manufacture of the synthetic rubber itself so that they won't be left without a market for butadiene after the war. They figure that with rubber to sell, they could hold their own in competition with the plantation product.

• **Postwar Market**—It's not hard to imagine that synthetic rubber will cut heavily into the market for Hevea when

it is again available after the war. That probability may be one explanation for Jesse Jones' failure to push synthetic production before the country was faced with famine. Obviously, neither the English nor Dutch welcomed initiation of this program, and the rubber manufacturers themselves did not wish to offend the British as long as the British had rubber to sell.

Another reason why the production of synthetic rubber has not expanded in this country has been inferred from the interest of the Department of Justice in an agreement between New Jersey Standard Oil and the I. G. Farbenindustrie dating back to 1929 or thereabouts. This agreement, by its terms, is alleged to have suppressed the use in the United States of German patent processes for the manufacture of synthetic rubber.

Whatever the lawyers may find with respect to the legality of this agreement—whatever its effect in the early years of its operation, the current picture is that Standard Oil has made the patents and knowledge of the processes involved in synthetic-rubber manufacture freely available to all concerns which wish to enter the business.

• **Not Then Attractive**—If the Depart-

ment of Justice can prove that Standard Oil sat on these patents in the past, it is equally true that the manufacture of synthetic rubber was not a commercially attractive proposition in competition with natural rubber at that time. There never was a chance that an infant synthetic rubber industry could make much headway in the United States against the interest of the British-Dutch international cartel, which could manipulate at will both the price and supply of plantation rubber.

Guayule Planting

New sowing and transfer of seedlings from nurseries to open fields get under way as program receives presidential signature.

On Mar. 5, the very day that President Roosevelt signed the bill authorizing the Department of Agriculture to undertake plantings of rubber "anywhere in the western hemisphere" and to buy the guayule holdings of Intercontinental Rubber Co. near Salinas,

The "Ifs" of Rubber Supply

The rubber situation in the United States is surrounded by so many "ifs" that it's unlikely that any predictions now should be taken too seriously. However, Leon Henderson's figures are designed at least to awaken the nation to the seriousness of the situation, and the very best he can say is

that we may just scrimp by over the next three years.

Put the worst possible face on it, and we'll need a million tons more rubber in 1942, 1943, and 1944 than we are likely to have. These are the figures (in tons) with which Henderson paints that gloomy picture:

	1942	1943	1944
New Supply			
Probable imports	434,000	135,000	98,000
Guayule .....	.....	1,000	5,000
Synthetic	25,000	165,000	362,000
Total new supply	459,000	301,000	465,000
Demand			
U. S. Civilian	200,000	165,000	165,000
Military, lend-lease, etc.....	409,000	617,000	617,000
Other exports	265,000	265,000	265,000
Total demand	874,000	1,047,000	1,047,000
Stocks first of year	693,000	278,000	—468,000
Stocks end of year	278,000	—468,000	—1,050,000

This tabulation admittedly takes into consideration only the increase in synthetic production that can certainly be counted on. Mr. Henderson has other figures, allowing for projected increases for synthetic, which would give this new industry production of 300,000 tons in 1943 and 600,000 in 1944. With this additional supply (which Henderson says would "require a miracle") the deficit at the end of 1944 would still be 677,000 tons.

The only way he can balance things is to cut 25% off all the demand items shown in the above tabulation—military as well as civilian and export. How that 25% reduction could be brought about in the case of the military he doesn't say (although it may be that his demand estimates for 1943 and 1944 were deliberately set high). If demand were thus held down, and synthetic production stepped up, we should about break even.



Nucleus of the government's guayule project is the property at Salinas, Calif., originally developed by Intercontinental Rubber Co. In nursery

plots seedlings are topped (left) prior to transplanting, then soil is loosened by machine (in foreground) so that laborers can remove the plants easily.

Calif. (for \$2,000,000), actual transplanting of year-old seedlings from nurseries to open fields began at Salinas. Simultaneously, planting of 24,000 lb. of seed in the nurseries was begun.

• **2,000 Acres by Apr. 15**—By Mar. 15 some 1,900 laborers will be at work on 2,000 acres to be planted before Apr. 15. About 1,000 acres are now bearing guayule for seed and for processing into rubber at the I.R.C. factory.

The government leases the ground from Salinas farmers at \$45 an acre. An \$18,000 building to house the mixing, washing, and germination rooms for treatment of the seed will be completed about Apr. 1. Other construction includes 85 miles of windbreaks for seed beds, 1,000 miles of wooden rails to serve as portable runways for machinery used in the seed beds, and housing facilities for some 2,000 men and their families.

• **Seed for 75,000 Acres**—Chief function of the Salinas operations will be to furnish seed for 75,000 acres of the rubber-bearing shrub to be planted, according to terms of the new law, "anywhere in the western hemisphere." Some of it will be planted in Texas, New Mexico, and Arizona, according to Maj. Evan W. Kelly, of the U. S. Forest Service, who has been placed in charge of the Salinas operations.

As cultivated at Salinas (BW-Feb. 7 '42, p68), the guayule shrub isn't ready for harvest for four years after planting. Plants run 8,000 to the acre and an acre yields about 400 lb. of rubber. Some experts advocate broadcast planting at the rate of 32,000 to the acre and harvesting after one year of growth, a method which they claim will produce the same amount of rubber.

Nonferrous Goals

Costs and future position of this or that metal no longer count; all emphasis is on setting ever higher production marks.

Signs are multiplying that hard business sense is coming in and wishful thinking going out in meeting the production program on critical war materials. Cost is no longer the yardstick used in measuring the needs of the job immediately ahead. Realism is the word.

• **Aluminum Schedule**—In lifting the sights on production of aluminum and magnesium (BW-Mar. 7 '42, p22), the light metals required for the airplane program, William L. Batt of WPB left old-timers in nonferrous metals almost speechless. Aluminum production, under the new schedule of the War Production Board, is to rise to 1,065,000 tons a year. During the last war, primary output of aluminum in this country averaged only 65,000 tons a year.

A year ago producers of copper and zinc were greatly concerned about future competition with light metals, notwithstanding the contention of competent observers that "there is a place for all metals." However, little worry is now being wasted in appraising the future position of this or that metal. The war is the thing.

• **High-Cost Bauxite**—To provide the needed raw materials for aluminum production the authorities in Washington plan to utilize every source from which aluminum can be obtained, even

to developing high-cost and otherwise uneconomic deposits of bauxite. Less dependence on imports to meet all possible contingencies is being stressed in the present program.

The magnesium program for this country is being raised from 200,000 tons a year to 362,500 tons a year, and the higher rate is to become a fact during 1943. A new safe process for producing the metal—the ferrosilicon process—will loom large in new facilities on which contracts have been signed.

• **What It Means**—To grasp the magnitude of this program one need go back no further than 1940, when the world's output of magnesium totaled around 50,000 tons. As in new aluminum production, the added facilities will be financed by the Defense Plant Corp.

After the war, much of the productive capacity in light metals will have to be closed down, metal authorities believe, with the result that it is generally accepted as quite useless to project the picture far ahead. Most thinking on the outlook for nonferrous metals at present is on a 24-hour basis.

• **Manganese Program**—Manganese ore, important in the production of steel, has finally moved into the cost-is-secondary class of war materials. The low-grade ore deposits of the United States are to be worked as never before. An enlarged manganese program calls for an output of more than 600,000 tons of high-grade concentrate a year.

Supplies of manganese on hand and in sight are regarded as ample for some time to come and the larger output now planned is viewed as insurance against the uncertain future. In addition to the stockpile of ore, reserves in the hands of the steel industry, and production of high-grade concentrate in Cuba and Montana, the question of adequate ocean tonnage weighs heavily in the minds of those familiar with the business of moving high-grade foreign ore to consuming centers.

• **New Domestic Sources**—Consumption of high-grade manganese ore at present is at the rate of about 1,250,000 tons a year. During 1941, domestic production amounted to only 100,000 tons of metallurgical-grade ore. Cuba produced about 250,000 tons. New sources of domestic supply in manganese will come from ten plants, all financed by the government.

Results of numerous experiments for beneficiating low-grade ore have been passed on by a committee of the National Academy of Sciences. Three large projects will profit by the recommendations of this group and production from these plants should account for fully two-thirds of the enlarged domestic output.

• **Notable Projects**—The largest project is to be constructed in the Cuyuna Range area of Minnesota. More than 1,000,000 tons of ore will be treated at

the plant to produce a high-grade concentrate. The Missouri River area of South Dakota and the Boulder Dam district of Nevada also have been named as locations for manganese projects.

Chrome ore is included under critical materials scheduled for a sharp uplift in output. The government will stop at nothing to raise domestic production to around 600,000 tons of ore a year. United States output of chrome ore during 1941 totaled around 12,000 tons, indicating how heavily this country leaned on imports to supply estimated requirements of more than 650,000 tons.

"Purp" Grows Up

Production Requirements Plan approaches real allocation system with but two priority ratings—"Yes" and "No."

"When an emergency exists it is better to do anything intelligent than to search hesitatingly for the ideal." A printed sign bearing this motto is posted in every office of the WPB priorities unit which administers the Production Requirements Plan. And in this spirit, PRP (famously known as "Purp") is quietly but steadily being converted into the program of firm allocation of materials to manufacturers which Donald Nelson has been promising since last fall.

• **Allocations at Last**—The immense amount of statistical information required to do a theoretically correct job of allocation has proved an impassable barrier to every previous attempt to apply a system of allocation at the manufacturing end. But, by a method of trial and error, PRP is becoming exactly that. Only three months old, Purp is getting to be a big dog now.

Allocation can be a good many things. On the raw-materials level, where it is already commonplace, it means that a producer is told monthly just where to deliver his product. But at the final manufacturing end it is something else again. Under a full system of allocation each manufacturer would be told that in the month of April he will be allowed so many pounds of this material, so many tons of that. There would be only two priority ratings—yes and no.

• **The Comparison**—A conventional priority rating, on the other hand is simply a ticket to stand in line at the window where the goods are sold. A high rating puts its holder up near the head of the line. But no one can tell, until he gets to the window, whether it will still be open. If it is open when he gets there, he can buy as much as he wants.

Purp falls somewhere between these two systems and is gravitating toward allocation. It was set up about three

months ago for the rather limited purpose of substituting for the unworkable Defense Supplies Rating Plan—to provide a consolidated priority rating to the firm that sells lots of different defense items to lots of different people. It was also aimed to help the firm which is not covered by any existing blanket rating (P-order).

• **Complications**—Without a system of this sort, such a manufacturer would become enmeshed in the endless paperwork of getting the materials he needs by extending the hundreds of different ratings attached to the orders he receives. And he couldn't even do this if he makes a practice of filling orders out of inventories of finished goods.

To get in under the Production Requirements Plan, a manufacturer fills out a rather terrifying looking three-page form, PD-25A. This calls for complete data on the products manufactured, the priority ratings on and destination of goods shipped, and a detailed breakdown of the physical quantities of materials used in the third quarter of 1941 and estimated needs during the coming quarter. A somewhat simpler form, PD-25X, may be used by firms doing an annual gross business of less than \$100,000.

• **Should Clear in Two Weeks**—Processing of either application in Washington normally takes ten days to two weeks. What the manufacturer gets back is a copy of his application endorsed to provide him with a priority rating or several different ratings on specific quantities of the materials he has asked for. The rating is good for a quarter-

year. If, during the quarter, the pattern of his needs changes, or if he finds the rating won't get him the stuff, he may file a supplemental application, PD-25F.

This feature of tying a priority rating to a specific quantity of goods is new to the priority system. And it is an essential element in the allocation-like features of the plan. Originally it was intended more or less simply as a ceiling on the use of the rating—to prevent abuse of a priority which it was intended to hand out rather liberally.

• **Making It Work**—Gradually, however, the view has grown up that it's pretty silly to give a man an A-8 rating, say, on 100 lb. of tungsten steel if an A-8 just won't get him any tungsten steel. Thus, rather than merely use a mathematical system to convert the ratings on a man's orders into a rating granted him for materials, the tendency is either to refuse a rating or to give a high enough rating to get the goods, even though for a quantity smaller than that applied for.

So that this can be done more intelligently, semiconfidential policy statements are being drafted for one industry after another. For a particular industry or product, representatives of the industry branches interested in the product or the materials it uses sit down with representatives of PRP, the Army and Navy Munitions Board, and the Bureau of Industrial Conservation.

• **Figuring Needs**—They arrive at an agreement as to the percentage of capacity at which it is necessary to keep the industry running (that is to say, how much material it shall get), the rating



STYLIZED CAMOUFLAGE

Quietly working behind the scenes of Detroit's gigantic conversion program, a large group of General Motor's stylists—erstwhile designers of automobile bodies—are cooperating with Army officials in perfecting methods

of camouflage. These men who once held the same single thought—to make their products as attractive as possible—are now experimenting with scale models of defense factories, airports, and other military objectives, with the idea of rendering them uninteresting to hostile aircraft.

to be assigned to its needs, and whether it shall be forbidden the use of certain scarce materials. Subsequent PRP applications from firms in that industry are then processed in accordance with this policy. About ten such statements have been drawn up.

This comes very close to a true system of industry-wide allocation, but it fails of being that in one important respect. Insofar as a rough estimate can do it, each policy statement is drafted in terms of small enough quantities of goods and high enough ratings so that the PRP order will get delivery of the specified materials. But there is still a chance that some month there just won't be enough material to go around—that the window will be shut before the customer gets there.

• **Difficulties**—Two things give rise to this imperfection, and moves are being made to correct each of them.

One involves inadequate information. Before a rating can be granted with real assurance that it will stay put, priorities officials would have to know the production and consumption figures on all important materials. Production figures are now pretty well in hand. The PD-25A application form provides just the information needed on consumption. However, only some 5,000 applications have been received so far—not enough to give other than a fragmentary picture. As more applications are received, at a rate of about 400 a week, the picture gets better and better.

Much of the picture will be filled in at one stroke when the Bureau of the Census completes tabulation of the returns on last month's questionnaire, PD-275. This questionnaire, almost identical in form with PD-25A, was sent to 10,000 selected firms which, together, account for about 90% of industry's metal consumption.

• **Purp Usurps Blankets**—The other difficulty is that there are too many wild cards in the deck. Most of the blanket ratings under which much of industry now operates set no limit on the amount of material which may be bought once a rating is granted. All the statistics in the world won't get around this.

But in recent weeks a beginning has been made at bringing the P orders into the framework of PRP. When the conveyor machinery order (P-78) expired, it was not renewed, but instead manufacturers were told to use PRP. Latest version of the defense housing order (P-55) forbids manufacturers to extend ratings served on them by builders, directs that they use PRP instead.

A somewhat different procedure is used in the new mining machinery order (P-56a). This order requires that application be made on PD-25A, and the rating is granted for definite quantities. Except that it is public and official,

P-56a is exactly equivalent to the informal policy agreements described above. A similar arrangement is used in P-91, elevators and escalators, and P-95, farm machinery.

Even if all the P orders are brought into conformity with PRP, it will still leave the individual ratings, PD-1A

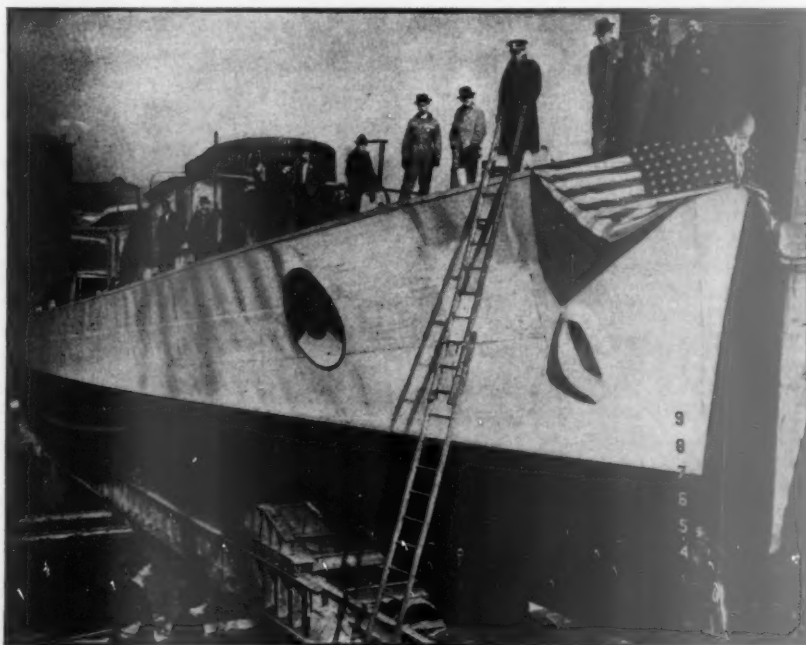
and PD-3A issued respectively by WPB and the procurement agencies, running wild. No action has yet been taken, but if the final decision is to make the Production Requirements Plan the route to real allocation, strict limits will have to be put on these still-common priority orders.



INLAND LAUNCHINGS

Details concerning the sizes of two mine sweepers launched last week, together with information about their armament, power and crews must necessarily remain naval secrets for the duration. Far more newsworthy (except possibly to Axis agents) is the fact that they are products of two far inland shipyards which are now

taking up where they left off during World War I. An undisclosed number of mine sweepers are to follow both the YMS-84 (above) down the ways into the Chicago River and the other sweeper (below) into the Cumberland River at Nashville. After finishing touches and tests by Navy inspectors, the two ships, which are designed for inshore sweeping, will proceed to salt water.



No Radio Sets?

Although production halt is scheduled for Apr. 23, industry hopes that it can talk WPB into easing the conversion blow.

At midnight on Apr. 23 the last radios and phonographs will leave the production line. Then—like the auto industry—the 55 radio manufacturers are to turn entirely to war production (they now hold \$500,000,000 in government orders).

● **Revision Possible**—At least, that's the picture as planned by the War Production Board last week. Insiders, however, figure that before the WPB order goes into effect, it's not unlikely that some changes will have to be made. The radio-set industry (especially the smaller elements) has been pretty adept in saving itself from being a durable goods casualty, but now WPB will be asked to save it from being a conversion casualty.

To begin with, a considerable percentage of the set industry's employees are cabinet-making woodworkers whose usefulness in wartime metal work is highly dubious unless they are extensively trained. Thus the industry is faced with a labor problem much worse than ordinary conversion trouble. Additionally, some of the smaller manufacturers have taken no conversion steps at all (13 of the 55 haven't any war orders even now), which puts not only the woodworkers, but everybody else, on the spot.

● **A Reprieve?**—These manufacturers are expected to ask WPB to release them from strict observance of the order, in the hope that they can keep assembling finished cabinets and chassis until perhaps as late as Labor Day. Incidentally, that would keep labor on the payroll, and assure the radio dealers a well-regulated trickle of sets for some months to come.

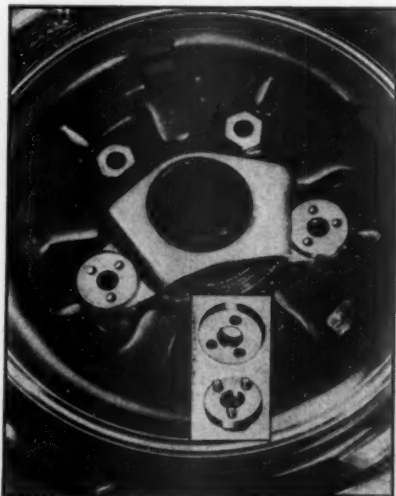
Merchandisers say there's an advantage to doling out sets in small parcels rather than heaping everything on the dealer at once. If factory shipments are strung out over a period of time, the dealer can stay liquid more readily.

● **Other Possibilities**—Several other tide-overs are also being put up for consideration. One is the necessity for building up a backlog of replacement sets (the 60,000,000 radios in the hands of 87% of U. S. families are figured to wear out at the rate of between 5,000,000 and 7,500,000 per year). Some manufacturers are suggesting a standardized "victory" set, though Washington has paid little, if any, attention to this proposal. Washington has been notably quiet about new radios with which to tune in a radio-minded govern-



WHEEL LOCKS

Out west there's talk of reviving vigilante organizations to discourage auto tire thievery, but inventive genius is also at work on the problem. A device (above) consisting of a special hexagonal nut, a steel plate which prevents the nut from turning, and a padlock is now manufactured by Auto Wheelox Co., 461 8th Ave., New York City. A factory-approved device (below) which Pontiac dealers are offering (it fits Oldsmobiles and Cadillacs as well as Pontiacs) employs a special wrench-key small enough to be carried in a pocket, which fits a corresponding set of round, tapered nuts which cannot be turned by pliers or an ordinary wrench.



ment, but manufacturers keep bringing up the matter as a conversion cushion.

A proposal to make 1,000,000 sets for distribution in South America (BW—Feb. 28'42, p28) is taken as a fairly serious possibility, awaiting final decision in a week or so. The U. S. makers would turn out the sets to keep their plants running, then sell them to Latin-Amer-

ican outlets on an actual cost basis. While this plan has the double merit of providing good will south of the border and payrolls for U. S. labor, its big drawback is also a doubleton—it may get stymied in official red tape, and it is a heavy consumer of metal.

It can be seen, however, that the set makers at least have a good list of alternatives with which to confront WPB.

Back in July (BW—Aug. 2'41, p24) when the set makers got hopelessly gummed up in "B" priority ratings, the Radio Manufacturers Assn. cannily asked OPM to forget about priorities entirely and give the industry its metal on an allotment plan. OPM put through such an order, and between the quickly-available metal and R.M.A.'s speed in finding substitutes, the industry last year produced a record 13,000,000 sets. As things stand now, the allotment has been cut drastically, and a WPB order has limited 1942 production to 3,000,000 sets, but the small manufacturer has been carried over the critical hump that loomed ahead of him last fall.

● **A Helpful Trend**—Another factor in the manufacturer's (and to some extent, dealer's) salvation has been the trend toward more elaborate, more expensive sets. Deeming it unwise to waste precious materials on cheap sets, the makers concentrated on flossy radio-phonograph combinations, and frequency modulation (AM-FM) sets. The current year is seeing an even greater tendency in this direction. Whereas 1941 had a proportion of 250,000 AM-FM units to a 13,000,000 total, 1942 will have 150,000 to 3,000,000. Stromberg-Carlson has thrown the regular radio out of production entirely. Its output now is 100% in the AM-FM field.

So far WPB hasn't said anything about what types of civilian sets may or may not be produced (beyond ordering that no manufacturer shall use more than \$500 worth of parts and materials, except wood, ordered after Feb. 11). OPA, however, has clapped on a price ceiling at the manufacturer's level and warned retailers not to vitiate this order by unduly raising their markups.

● **Subcontracting**—To relieve the industry's smaller elements, WPB is being asked to assign manufacturers who are not prime contractors to subcontracting jobs for the bigger boys. This plan, incorporated into the latest WPB order, is scheduled to be worked out on a mandatory basis.

Meanwhile, what will be done about the manufacture of replacement tubes and condensers is still up in the air. Last year some 33,000,000 replacement tubes were sold, and the industry got its metal on an allotment plan similar to that employed in the manufacture of new sets (BW—Aug. 30'41, p25). These allotments have recently expired and no renewals have been ordered.

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In peace and war, in good times and bad—year-in year-out for a century—Ryerson stocks of steel have been American industry's prompt, dependable source of supply.

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The two-fold Ryerson function is to supply steel where needed, without delay—and to aid in the most effective, intelligent use of that steel in every way that experience and skill can suggest.

Wartime demands have made inroads in Ryerson stocks, but Ryerson resources are at your command, to assist you in meeting any problem of steel supply or application.



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WAR BUSINESS CHECKLIST

Washington's Significant Orders on Materials and Prices

• **Rubber**—Amendment of Order M-15-b revises the lists of articles for which rubber and latex may be used at specified percentages of the 1941 rate. Net effect is to reduce rubber consumption. Changes, mostly codifying decisions made last month, include increases in consumption for rubber-lined tanks, pipes, and fittings, and for electricians' gloves, reductions for fire, mill, suction, and welding hose, and for conveyor belts.

• **Steel**—Emergency specifications for alloy steels have been agreed to by representatives of WPB, the steel industry, and the technical societies. Effect is to limit use of nickel, chromium, tungsten, cobalt, and vanadium alloys, encourage use of carbon manganese, carbon molybdenum, manganese molybdenum, and silico-manganese steels.

• **Construction**—An amended form of the construction order, P-19-h, omits all reference to the now obsolete priorities critical list. It may be extended by builders to whom it is issued by simple endorsement on purchase orders. Suppliers must file with WPB a form of acceptance the first time they extend a P-19-h rating, but need not do so thereafter even though the rating comes to them from a different builder.

An amended form of the defense housing order, P-55, may be extended by distributors of building materials.

• **Paper**—Manufacturers of kraft converting, coarse sulphite, and tissue papers have been asked by OPA to agree not to exceed the Oct. 1 to 15 top prices.

The Feb. 20 agreements on price of converted paper products are intended by OPA to include paper shipping sacks.

• **Bedding**—Temporary Order No. 5 freezes manufacturers' prices of mattresses, springs, studio couches, and metal beds and cots at the Feb. 23 level for 60 days.

Feb. 23 prices charged by manufacturers for sisal pads are frozen for 60 days by Temporary Regulation No. 4.

• **Wool**—Consumption of cloth in men's and boys' suits and overcoats is reduced by Order M-73-a, effective Mar. 30 for manufacturers and Apr. 30 for merchant tailors. No full dress, cutaway, or double-breasted tuxedo may be made. Two-trouser suits are forbidden, as are cuffs on trousers, vests with double-breasted suits, and patch pockets.

Wholesalers of wool floor coverings are forbidden by Schedule 65 from charging a price higher than the price quoted by the manufacturer for sales to retailers (now regulated by Schedule 57).

• **Rayon**—Rayon producers are required by Order M-37-c to set aside 4% of total viscose and acetate production for export to the American republics. After

defense and export requirements have been met, 17% of viscose and cuprammonium output must be assigned to hosiery and weaving industries.

• **Other Textiles**—Amendment of P-53 raises from A-10 to A-8 the rating available to makers of textile machinery.

Delivery or use of cotton duck is forbidden by Order M-91 except to persons to whom have been issued (not extended) priority ratings of A-1. At a future date, WPB will set aside a certain number of looms to manufacture duck for uses listed, including hose, belting, packing, and filters. Orders on hand Jan. 15 may be filled until Mar. 31.

Prices of silk waste are frozen by Temporary Regulation 7 at the level of March 23-28.

Future imports from India of raw jute are restricted to defense uses by Order M-70.

• **Telephones**—Telephone companies are required by Order L-50 to limit the margin for expected growth to three years when installing new facilities. In addition, they are ordered to use party line service wherever it will conserve scarce materials and to discontinue conversion from manual to dial systems, replacement of wall and desk phones with hand sets, and installation of extension phones in residences.

• **Trucks**—Manufacture of trucks of less than three tons' capacity is forbidden after completion of February quotas by amendment of L-1-a. Assembly of heavy trucks from parts wholly or partially fabricated before Feb. 28 is permitted but no further material may be fabricated.

Manufacture of truck and bus parts during 1942 is permitted, by amendment of L-35, up to 150% of 1941 replacement sales. Amendment of Order P-107 grants an A-2 rating for materials going into such parts until June 30.

• **Gas Masks**—Manufacture or sale of gas masks or antigas devices for protection against enemy action is forbidden by Order L-57 except on a defense order in accordance with Chemical Warfare Service specifications. Ordinary industrial masks are specifically exempted.

• **Other Priority Actions**—Railway equipment is added to the permitted uses of copper by amendment of M-9-c. . . . Use of large jewel bearings and vee-jewel bearings except to fill orders rated A-9 or better is forbidden by amendment of M-50. . . . WPB has ordered that sugar not be delivered to canners more than 45 days in advance of use. . . . Order P-81-a granting an A-1-a rating to manufacturers of cutting tools has been extended to July 1. . . . Rating granted commercial airlines has been raised from A-3 to A-1-j by amendment of P-47.

IN YOUR BUSINESS...OR ON YOUR OWN CAR...

General's Mileage Maintenance Plan

CAN HELP YOU SAVE YOUR TIRES



Under the Government restrictions, every tire on every vehicle operated by your business . . . or owned by yourself . . . has become an extremely valuable property, demanding the best care available.

Recognizing the vital need for regular, systematic inspections and repairs, America's Quality Tire experts . . . The General Tire Dealers . . . now offer you a tire mileage maintenance service.

Included in the plan are 12 important operations, performed by trained tire specialists, using the most modern, scientific equipment, which will put and keep your tires in top condition . . . for the longest possible mileage.

By putting the care of your passenger tires and

truck tires into the hands of your General Tire Dealer now, you can assure yourself of mileage far in excess of what you have normally gotten.

As a theft deterrent, General Tire Dealers are equipped, also, to brand your tire sidewalls with large numerals, registered for police identification. Experience proves that thieves avoid tires branded in this manner.

Regardless of your make of tire, investigate this maintenance plan . . . and consult with your General Tire Man about any of your tire problems. His long experience in helping both passenger tire and truck tire users to get maximum mileage has equipped him to help you keep your tires running.



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THE GENERAL TIRE & RUBBER CO. • AKRON, OHIO

Business Week • March 14, 1942



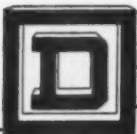
He'll Be Jumping Through a Hoop—



Like a treacherous jungle cat on the loose, uncontrolled electricity could become a vicious, dangerous and destructive force.


But electricity has met its master. Its tremendous power, under complete control, performs modern miracles at the mere push of a button or the turn of a switch.

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a pioneer part in making electricity the invaluable servant it is. Wherever electricity is used, you'll probably find a Square D device controlling or regulating it—making it safe. In homes, in commercial buildings, in four out of five of the nation's industrial plants, you'll find the familiar  emblem. And in the air, Square D's Kollsman aircraft instruments.

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Who Needs Gold?

New priority order favors production of base metals over precious, and miners of West launch protest campaign.

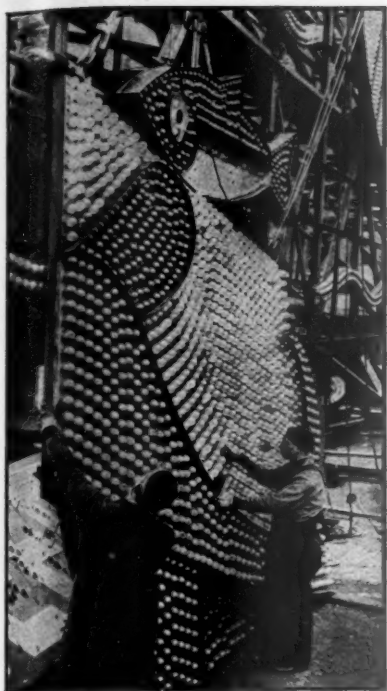
Mining men from all over the West descended on Reno this week for one of those fight-for-your-life-boys meetings. Washington had delivered a body blow to all mines that produce almost exclusively gold or silver; it was unaccustomed treatment to an industry that has won \$35 gold and 71¢ silver by act of Congress. This time Washington wasn't in a pampering mood, for obvious reasons. The war production authorities want big output of industrial metals like copper and lead and zinc. To get it, they have to allocate mining machinery, repair parts, and labor. To let gold and silver mines have machinery and men would be to compete directly with war output of the other metals. So, in Amended Order P-56, the gold and silver mines were denied the blanket-rating assistance previously available to all mines.

• **Protect Byproducts**—The order, recognizing that the scarce industrial metals often are byproducts of gold and silver production, excludes from P-56 relief those whose dollar volume runs more than 30% gold or silver. To protect byproduct metals, the mines now denied blanket aid may come in individually for priorities for needed repairs, each case to be decided on its merits. In any event, the gold and silver mines may fall back on the automatic A-10 priorities available under the Repair and Maintenance Order (P-100).

The miners who went to Reno were mostly those who figure they'll have to close shortly if the order is enforced. In tonnage, they may not produce much gold and silver, but these metals, at \$35 and 71¢ an oz., total up pretty high against copper at 12¢ a lb. and zinc and lead at even lower prices. And then there are areas like Cripple Creek, only now reopening due to the beneficial effects of Carlton Tunnel. This camp has yielded, over its 50 years, an estimated \$386,000,000 in gold and silver, and \$83 in copper, \$49 in lead, and nothing in zinc.

• **Tough on Dredges**—In the toughest spot of all are the big dredges that paw up square miles of Colorado and California soil for a few ounces of gold. Their production is entirely the yellow metal.

Members of the Senate mining bloc already are buzzing around Washington, so if the priorities people are called onto the mat for mistreating the gold and silver interests it will be no surprise to political observers.



DEAD FISH

Broadway's greatest sign—Wrigley's swimming fish—which for six years has stopped native New Yorkers and visitors alike, is coming down, fish by fish, as a power-conservation measure. The sign, operated at a cost of \$10,000 monthly, consumed enough electrical current to supply a community of 10,000 persons.

Back to the Quill

"Freezing" of typewriters comes as prelude to fixing of prices, and signals conversion to war production.

Due to a misworded WPB press release, many Friday morning (Mar. 6) papers carried the news that "all deliveries of new and used typewriters will be stopped at midnight tonight by a Limitation Order (L-54) issued today by J. S. Knowlson, Director of Industry Operations." Actually Order L-54 had already gone into effect one minute after midnight Thursday.

• **Rules on Sales**—No new typewriter may be delivered to any consignee without express permission of Knowlson's office. Used typewriters (including "factory rebuilds") are likewise frozen except that they can be delivered for repair and redelivered to owners; a machine may be borrowed while another is being repaired; rented machines may be



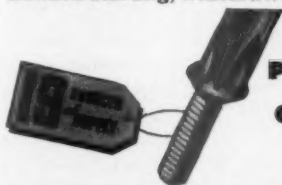
Faster Driving • Fewer Operations • Stronger Fastenings = 50% Less Assembly Cost with Phillips Screws!

Consider the more frequent use of power drivers with Phillips Screws. There's no danger of driver point slipping from a Phillips recess, so there's no need to go slow. Phillips cuts actual screw-driving time to a fraction.

Add the saving through eliminating the extra work required with slotted screws—drilling pilot holes, two-handed starting, withdrawing crook-

ed screws, driving in awkward positions, etc. Phillips Screws set up tight—without split screw heads or burrs—at an average cost saving of 50%.

Busy defense plants are using Phillips for double-quick assembly speed. Non-defense plants use Phillips for 50% less assembly cost. Get the facts from one of the firms listed below.



PHILLIPS RECESSED HEAD SCREWS

GIVE YOU *2 for 1* (SPEED AT LOWER COST)

WOOD SCREWS • MACHINE SCREWS • SHEET METAL SCREWS • STOVE BOLTS • SPECIAL THREAD-CUTTING SCREWS
• SCREWS WITH LOCK WASHERS

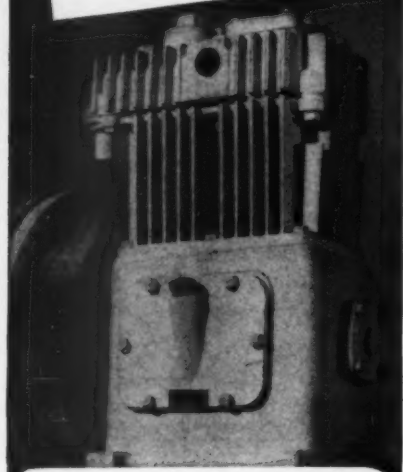
U. S. Patents on Product and Methods Nos. 2,046,343; 2,046,837; 2,046,839; 2,046,840; 2,082,085; 2,084,078; 2,084,079; 2,090,338. Other Domestic and Foreign Patents Allowed and Pending.

American Screw Co., Providence, R. I.
The Bristol Co., Waterbury, Conn.
Central Screw Co., Chicago, Ill.
Chandler Products Corp., Cleveland, Ohio
Continental Screw Co., New Bedford, Mass.
The Corbin Screw Corp., New Britain, Conn.
International Screw Co., Detroit, Mich.
The Lamon & Sessions Co., Cleveland, Ohio
The National Screw & Mfg. Co., Cleveland, Ohio

New England Screw Co., Keene, N.H.
The Charles Parker Co., Meriden, Conn.
Parker-Kalen Corp., New York, N.Y.
Pawtucket Screw Co., Pawtucket, R.I.
Phoell Manufacturing Co., Chicago, Ill.
Russell, Burdell & Ward Bolt & Nut Co., Port Chester, N.Y.
Scovill Manufacturing Co., Waterbury, Conn.
Shakproof Inc., Chicago, Ill.
The Southington Hardware Mfg. Co., Southington, Conn.
Whitney Screw Corp., Nashua, N.H.

MODERN DESIGN

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over-all efficiency



QUINCY was the first to design and build an air compressor that combined modern appearance with improved mechanical features. Simpler construction, increased radiation area and more positive lubrication greatly increase the over-all efficiency of QUINCY Compressors.

The Quincy Compressor Co. builds air compressors exclusively. For more than 20 years this policy of specialization has helped to make the name "QUINCY" a symbol for efficiency and dependability.

If you have compressed air problems in connection with your work, let QUINCY specialists help you solve them.

New AIR COMPRESSOR SELECTOR

Accurately selects correct size and type compressor in one minute! Works like a slide rule. One simple setting gives: free air delivery, r. p. m., piston displacement and h. p. motor required.

Sent FREE
upon request



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Branch Offices:
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returned to their owners; candidates about to take a Civil Service examination can borrow a typewriter for that specific purpose.

Next on the docket will be an OPA rationing order, the Office of Price Administration having already been authorized by the War Production Board to ration at wholesale and retail levels the sale, transfer, or other disposition of used typewriters and limited quantities of new typewriters.

Meanwhile, typewriter manufacturers like International Business Machines, Remington Rand, Royal, Underwood Elliott Fisher, and L. C. Smith-Corona are as completely in the dark as their bewildered customers.

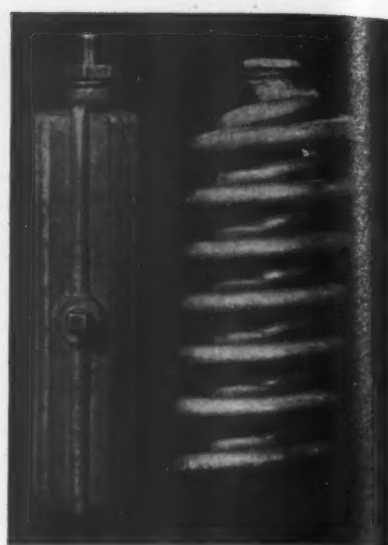
• **Facts on Output**—They know they produced 722,000 standard office typewriters in 1941 (WPB figures). One big manufacturer, whose production accounted for about a third of that quantity, estimates that 3,000,000 of the 5,500,000 machines built by his company during its history are still in use, or usable if rebuilt.

All manufacturers suspect that WPB and OPA have their eyes on millions of "part-time" typewriters, used only occasionally by their owners, as a reservoir from which to draw and rebuild for war and essential civilian use. They have a hunch, amounting almost to a conviction, that their industry will follow the automobile industry, in being converted to 100% war production.

CONSERVING CARS

National organizations which have been devoted to getting more people into more automobiles with greater safety are now turning their attention to the wartime job of getting more people into fewer automobiles just as safely. The Automotive Safety Foundation and the American Association of State Highway Officials, with 54 other organizations cooperating, are sponsoring countrywide adoption of what is known as the "Michigan Plan," which started with a survey in Pontiac, Mich.

This survey, by the Michigan State Highway Department, showed that, of 25,841 workers in 10 big Pontiac plants, 4,408 were travelling to and from work by bus and the rest were using 15,152 private automobiles averaging less than two passengers to a car. On analysis, the Highway Department figured that, by good planning and publicity, the busload could be raised to 9,000 and the rest of the workers handled by 4,500 cars, four passengers to a car. This would mean publicity to stimulate "ride-to-work" clubs of cooperating employees, staggering of plant shifts, revision of school and shopping hours, plant-by-plant and citywide organization of a formal auto conservation program. The job Pontiac has started along these lines will now be sold to the nation.



PLUMBING SUBSTITUTES

In Washington, Sears, Roebuck & Co. is displaying a line of plumbing goods designed to eliminate "stop use" materials. The exhibit was arranged by Lessing J. Rosenwald, former board chairman of Sears, who heads the Bureau of Industrial Conservation of WPB. Substitution of water heater iron castings (left) for copper coils would save 280,000 lb. of copper annually on basis of Sears' 1941 sales. On both closet and humidifier floats (below) glass bulbs with plastic couplings (left) are to replace copper with an estimated saving of 125,000 lb. of copper annually. In all new models important dimensions, threading, etc., remain unchanged to facilitate replacements and repairs. Catalogue prices are the same as for previous models; may be lowered with increased production.





مارمن هرینگتون

means "MARMON-HERRINGTON"
in Damascus, Baghdad, Teheran, or Kabul

THE NAME Marmon-Herrington is cosmopolitan. Transliterated into a score of tongues, it is as familiar, almost, in Afghanistan as it is in Texas—as well known on the South American pampas as it is in the Dakotas or in New England.

Everywhere, on the face of the globe, it is associated with feats of transportation which are too difficult for any other vehicles to accomplish. It is a name that is associated with automotive units having propelling force applied to all wheels, which neither desert sands, marsh mud, nor mountain steeps can halt.

For over a decade, Marmon-Herrington vehicles have been objects of awe, almost of superstition, to natives of far-flung lands where automotive vehicles had never been able to penetrate before. The famous Nairn



Brothers passenger and freight line across seven hundred miles of Arabian desert, from Damascus to Baghdad relies upon Marmon-Herrington vehicles for service that even the war has been unable to disrupt. The great oil pipe line from Iraq to the Mediterranean, a vital pawn in the struggle for supremacy in the Near East, was built largely, and is serviced now, with

Marmon-Herrington *All-Wheel-Drives*. Soldiers of many foreign governments ride on Marmon-Herrington trucks.

At home, in America, these Marmon-Herrington *All-Wheel-Drives* reduce hazards of skidding on icy pavements and conquer the deepest drifts in snow removal. They haul incredibly heavy loads of logs from forests and build roads and dams. They service power, light and telephone lines across country, and do a hundred and one jobs which conventional vehicles would be unable to do.

Wherever there is need for superior traction as well as power and dependability of the highest degree, Marmon-Herrington *All-Wheel-Drives* constitute a dividend-paying investment. There is a model and size for every requirement.

MARMON-HERRINGTON

INDIANAPOLIS, INDIANA



**HOW
MANY
OF
YOUR
MEN**

ARE ABSENT EACH DAY?

Group Wash Fixtures Reduce These Man-Day Losses

Lost man-hours caused by absentees mean lost production which is gone forever,—a loss that very seriously retards our war effort.

Physicians say that one major cause of lost hours is Dermatitis (skin affection) which however can be practically eliminated by proper and regular washing.

Most of our leading industries guard employee health with sanitary Bradley "Multiple-person" Washfountains. Bradleys serve 8 to 10 persons



One of American Can Co. plant washrooms equipped with sanitary Bradley Washfountains.

simultaneously—supplying each with clean, sanitary running water from a central sprayhead.

Bradleys save time and space, and reduce water consumption... They cut installation costs, too, because an 8 to 10-person Wash Fountain requires but one set of piping connections, 1/8 to 1/10 as

many as required for 8 to 10 "single person" wash basins.

Our Washroom Consultants are ready to give you details and make helpful suggestions. "Washroom Plan Book" will be mailed on request. **BRADLEY WASHFOUNTAIN CO., 2205 West Michigan Street, Milwaukee, Wisconsin.**

BRADLEY
Washfountains



The sprayhead serves clean running water to each person—the bowl is self-flushing to prevent collection of water and contamination.

Bad News for Oil

Amazing East Texas field shows strong signs of petering out at very time when gasoline situation is critical.

The incredible East Texas oil field has begun to peter out. And with that news the critical gasoline and fuel-oil situations on the East Coast take on new significance.

In approaching exhaustion at this time, the great pool runs true to a troubled birth and a stormy career. East Texas roared into production during 1930, loosing such a flood of petroleum upon a weakened market that the price of crude sank to a dime a barrel. Now East Texas potency tapers off sharply while the country is in a war for life.

• **Honest Harold's Troubles**—During the NRA era, Secretary of the Interior Harold Ickes was the petroleum czar. He had plenty of grief with "hot oil" produced beyond the legal limit in East Texas (BW—Jan. 19'35, p20). It is this same Harold Ickes who, as petroleum coordinator, sorrowfully announces that an alarming decrease in underground pressure threatens East Texas production. Falling pressure is a sure symptom of age in an oil field. This trapped force (sometimes gas, but in the case of East Texas a salt water "drive") is what brings the oil to the surface. When it gives out, pumps have to be installed.

• **Drop in Pressure**—Wells in the field have been producing salt water for some time. But the threat became officially serious when engineers of the Texas Railroad Commission announced that pressure in the sprawling field dropped 15.85 lb. during January.

Railroad Commissioner Jerry Sadler made a rush trip to Washington to talk with Secretary Ickes about prospects. An Ickes statement dramatized the East Texas pool as so important that "it may well be considered as our factor of safety in supplying the nation's petroleum requirements for the duration of the war."

• **More Salt Water**—Texas hadn't waited for any red flag from Mr. Ickes, as a matter of fact. An order for the reinjection of salt water into the field was issued, effective Apr. 1. Like the pumping of gas back into underground pools, the reinjection of salt water restores some of the well-bottom pressure. It acts something like a blood transfusion. A questionable phase of the order is a bonus plan. It provides that a well owner is allowed to produce one extra barrel of oil (under prorated production) for each 50 bbl. of salt water that comes from the casing.

• **Transfer Arrangements**—Under the plan the owner of a well producing

much water can assign his bonus allowance to another well owner who may be in the "fairway" of the field where as yet no water is in evidence. It also allows the owner of a well producing more than 100 bbl. of water a day to close the well entirely and assign his allotment to another well on the same lease.

If the water is drained away too rapidly it is estimated that it will prevent the recovery of 600,000,000 bbl. of oil which is almost half the country's normal needs for one year. To prevent further pressure drop, operators in the field have formed a mutual corporation to pump back the salt water through abandoned casings to the oil-bearing strata. If the pressure decline continues, many well owners will have to install pumps—and there aren't enough pumps to be had because of metal shortages.

• **"Dad" Joiner's Dream**—Geologists scoffed when "Dad" Joiner, a grizzled wild-catter, began to drill among the scraggly pines in the East Texas region. Two wells flowing 10,000 bbl. a day ushered in the epic discovery. Subsequent drillings showed that the field comprised 122,000 acres (200 square miles), with deposits of some 4,000,000,000 bbl. of oil. It was a dream pool for drillers. They had only to penetrate some 3,600 ft. of chalk, shale, and sand to tap East Texas riches.

At one time, before Texas and federal authorities got production under control, the hot oil flow was estimated at 125,000 bbl. daily. With crude selling now around \$1.25 per bbl., well-owners who sold for 10¢ in the unrestrained period would like mighty well to have their oil back.

Revived Oil Wells

Techniques of rejuvenation take on greater significance as maximum production is sought with minimum use of steel.

Produce more oil without using the tons of steel needed to bore new wells. That was the imperative theme of a meeting of California oil leaders in Los Angeles a few days ago. And they see a good chance of putting the job over.

Not much has been said about it yet, but new techniques of logging and gun-perforating old wells—developed in the last few years (BW—Mar. 2'40, p43)—may turn the trick. If new processes will rejuvenate wells heretofore considered too far gone to be worth "shooting," then Coast operators will give them a try.

• **Industry's Problem**—The oil industry is expected to supply close to 1,900,000,000 bbl. this year (instead of the normal 1,500,000,000 bbl. estimated

before the war emergency) with a steel quota set at 74% of 1941. It must increase production from pumping wells, drill more wildcats to find new fields, and open up old wells if they can be made to repay pumping and stripping. New drilling is to be limited largely to exploration with a few new wells in proved fields.

Between 1859 and 1940, an estimated 1,800,420 wells were drilled, of which about 760,000 yielded oil. At the end of 1941, about 400,000 of these were producing and 360,000 had been abandoned or shut in.

In 1941, some 32,000 new wells were drilled, with an average depth of 4,350 ft. The cost of drilling varied from \$15,000 to \$60,000, of which one-third was the cost of steel casing.

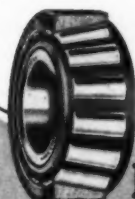
• **In Terms of Steel**—For 1942, government quotas allow 16,830 new wells. At average 1941 depths with a single string of casing, each well will need at least 60 tons of steel costing around \$6,500, which will mean about 1,000,000 tons all told. Estimated increased production from that many wildcats may be figured at something like 25,000,000 bbl.

The Lane-Wells Co., Los Angeles pioneers in this technique, figure that, with radioactivity logging and gun perforation, at a cost of about \$1,000 per well, many of the shut-in and low-production wells can be brought quickly into production without the use of additional steel. Also, with selective completion of new wells, a single string of casing can be used, instead of from two to five, a great saving in steel.

• **Gun Perforation**—Lane-Wells developed gun perforation, by which steel bullets are fired from a special gun let down in a cased well, to bring in oil that had been shut off in drilling lower down and to tap more productive levels. The first successful perforation of a well occurred in California in 1932. The well, which was off production and about to be abandoned, resumed production at 40 bbl. a day. It is still pumping, having yielded 150,000 barrels since its rejuvenation.

This company later developed the electrolog, for plotting oil levels in new uncased wells, and the radioactivity log, which records formations in either open or cased hole. The electrolog operates by the electro-resistance of different formations, and the second method by the radioactivity. The latter is the first successful method for use on wells drilled before electrical logging or coring methods were available.

• **Saving of Time**—Besides steel-saving, the time factor is favorable for the new techniques of rejuvenation. Against the weeks needed to drill new wells, and the percentage of dry holes, these shut-in wells are ready to produce, if they have reserves of oil, after a job of logging and perforating that takes only days.



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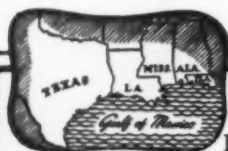
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BUSINESS WEEK REPORTS TO EXECUTIVES ON

1942—THE YEAR TO WIN OR LOSE _____

Only a few people realize it yet, but the fall of Singapore marked a more significant turning point in this war than the surprise attack on Pearl Harbor. Dec. 7 merely formalized our participation in the Second World War. But when victorious General Yamashita laid down the terms of surrender in the Ford Motor Co. offices in Singapore in February, and the Union Jack—after flying for 123 years over this commercial capital of the Far East—was supplanted by the Rising Sun, the Axis won more than the surrender of a great naval base. With Singapore went the United Nations' dominant control over the strategic war materials of the world. For with it also went the back-door defenses to the Middle East—where the outcome of the war may now be decided. Roosevelt-Churchill dreams of stockpile-building in 1942 for a carefully-planned offensive in 1943 were made obsolete by "black February" in the Pacific—and the Atlantic. Whether we win or lose in the long run depends on what we are able to do in the terribly short run of 1942—which War Production Chief Donald Nelson terms "the critical year in the existence of the United States." How this dangerous change came about, how economic necessity will determine the military strategy of the "spring campaign", and what it all means in terms of new war tasks for American industry is the subject of the Report to Executives which appears on the following pages.

THIS IS ONE OF A SERIES OF SPECIAL REPORTS TO EXECUTIVES ON CURRENT OPPORTUNITIES, PROBLEMS, AND TRENDS OF MAJOR SIGNIFICANCE TO BUSINESS

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1942—THE YEAR TO WIN OR LOSE

The next great crisis of this war is approaching. It will come if Japan, after dislodging the United Nations from their last bases in the Far East, succeeds in joining hands through the Indian Ocean with German armies striking through the Middle East. It would be of the same deadly nature as a German invasion of Britain.

This is a climax toward which Axis moves have been aimed since Japan's December attack on Pearl Harbor. Most Americans, however, don't yet understand all of the implications of the developments of the last three months.

Tokyo made its move in full collaboration with Berlin as part of a desperate and carefully laid plan. Germany, despite its spectacular conquests stretching from Narvik to Bengasi, and Japan, though it controlled the whole coast of China, knew they could never win the final victory which would allow them to consolidate their hold on these territories until they had knocked out the British Empire and the United States. To do that, both nations have realized they must ultimately risk a showdown on the high seas.

Germany was totally unprepared to initiate this thrust. Its modern but lilliputian navy was no match for even that part of the British fleet which remained in the North Sea. But Japan, with the world's third largest navy, was in a different position. If Hitler's submarines could keep important sections of the British and American fleets busy convoying in the Atlantic, and Nazi supply ships could keep other units occupied in the Mediterranean, Japan could risk an attack in the Pacific.

United Nations Lose Strategic Supplies

That attack came Dec. 7, and has been followed by a string of terrifyingly rapid victories which have already cost the United Nations every important naval base from Pearl Harbor to Australia, and opened the way into the Indian Ocean at Singapore for Japan to push on to its next objectives.

What has gone unnoticed by many Americans is the fact that Japan's spectacular conquests have served to highlight an alarming shift in the economic strength of the Axis and the United Nations.

In 1938, before Hitler started his blitz conquest of Europe and when Japan's exploits were confined to its dubious hold over parts of China, the world correctly dubbed them the "have not" nations. Out of 27 strategic industrial and food commodities, they were the dominant producers of only one—potash, while the nations which later lined up to fight the Axis controlled 90% or more of the output of 15 of them. It was on this overwhelming potential economic strength that first France and Britain and later Britain and the United States laid their plans for a delayed-action war until they could mobilize all their latent power.

But two-and-a-half years of war have brought shocking changes. The United Nations still hold the advantage but it has shrunk alarmingly. The Axis today controls

90% of the world's rubber, 70% of the tin, and 65% of the bauxite. Its iron-ore production is only slightly less than the United Nations. It has upped, at the expense of the "have" powers, its lead, zinc, and chrome holdings; its production of coal could, without much effort, be boosted to equal the output in the United Nations. Japan's food supplies have been strengthened by its capture of Asia's great rice fields in Indo-China, Thailand, and Burma; Germany's by its hold on the Balkans.

Singapore a Turning Point

The time is gone when the United Nations—and particularly the United States—could plan and build solely for an offensive in 1943. Already most of the bases in the Pacific are lost. So is the oil of the Indies and Burma. And so also—unless we move speedily—may be the food and clothing base in Australia, the small arms supplies from India, and the fueling base in Iran.

The United Nations are still "have" powers, but their hold on the world's strategic raw materials has been so desperately weakened that they can no longer afford to lose more. For if the Axis can hold what it has already grabbed, and add what might yet be won while we are still preparing for the grand offensive, they may become too strongly entrenched to be dislodged from the distant bases left to us.

Within the last few weeks Washington has made several important shifts in its production plans, apparently in recognition of these changed conditions.

A shipbuilding program of 6,000,000 tons for 1942—a figure which staggered even the experts when it was announced a year ago—has been boosted in two quick moves to 9,000,000 tons because our supply lines in the east, since the loss of Manila and Singapore, are nearly twice as long as we had expected them to be and because of our own mounting losses from submarine attacks.

Priority ratings on long-range bombers are back to A-1-a, now that we are dislodged from practically all of our bases near Japan.

New War Situation Develops

And wool—always a worry because we normally buy half our supplies from distant Australia, China, or Argentina—jumped toward the top of the list of strategic materials as Australia began to get its first bombings and German submarines continued their successful sniping at ships coming up our East Coast from Latin America.

To be able to interpret developments correctly in this rapidly shifting global war, it is essential for business to have a clear and realistic picture of what the fall of Singapore, Soerabaja, and Rangoon means in terms of lost sources of raw materials, distances to bases, and the sudden, vital importance of the sea lanes and military outposts still in our hands.

The purpose of this report is to warn business of some of the inevitable economic repercussions of the battles still being fought in the Far East and Russia, and to

point out some of the new supply and production problems likely to develop on farflung fronts in the next few months.

I. THE MIDDLE EAST FRONT

Keep your eyes on the Mediterranean and the Middle East—the great stretches of land and inland sea reaching from Gibraltar to India. Here the Axis and the United Nations face each other on a great land front extending from the Libyan desert, around the eastern end of the Mediterranean to Syria, and across Iraq and Iran to Afghanistan and India (see map, page 37).

This is one of the oldest crossroads of the world. Through it today run the transportation routes—by land and sea—over which troops and supplies can be shifted from one front to another. And through it pass the communication lines which assure the coordination of the United Nations armies. In this great basin the major powers among the United Nations meet—Russia, Britain, and, of late, the United States. And facing them—in Italy, Greece, Bulgaria, and Libya—is the Axis.

Stark, backward, and poor as most of the area is, it is the keystone of the United Nations defense structure. Today it is relatively quiet; tomorrow it may become a major battlefield.

Why is this Mediterranean-Middle East front so important?

Economically, the whole vast area has only one significant war asset—oil. The petroleum fields of Iran are the fourth most important in the world. Only the United States, Russia, and Venezuela outproduce them.

The whole property—the field and the pipeline running 120 miles to the giant Anglo-Iranian Co. refinery

at Abadan on the Persian Gulf—is controlled by the British government, which owns more than half of the outstanding shares. It was acquired in 1914 and developed specifically to fuel Britain's great naval and merchant fleets when oil began to replace coal. Latest records show that the fields produce about 78,000,000 bbl. of oil a year though this total can easily be boosted.

Second oil field in the region is in Iraq. The Mosul field, midway between Baghdad and the Turkish border, was developed after the last war. Its production has never been pushed above 25,000,000 bbl. a year, almost all of which was piped to refineries at Haifa, Palestine, and Tripoli, Syria. According to recent reports, most of the wells have been sealed but the fields have not been damaged. Because of the threat of German raids on Tripoli and Haifa, following the German occupation of Crete and the Greek islands off the Turkish coast, and because of the German-inspired disturbances in Iraq, Britain stopped the flow of oil and placed its full dependence on supplies coming from the Persian Gulf.

Americans Develop Middle East Oil

The third important oil field in the region is on the islands in the Persian Gulf off the coast of Arabia. The new field has been developed by Americans—mainly the Standard Oil Co. of California and The Texas Corp. Actual production is not large (18,000,000 bbl. a year according to latest reports) but reserves are reported to be substantial.

There's one more field along the Red Sea coast of Egypt where Royal Dutch Shell interests have developed an annual production of 6,000,000 bbl. which is refined at Suez.

All of the oil in these four Middle Eastern fields is



Istanbul—once again a question mark on the map of a world war, wrapped in the mystery of neutrality in a conflict that permits of no real neutrality, lying athwart the Axis road to oil, rising out of no-man's land in front

of the United Nations' Middle East defense line. The sword that first strikes this strategic knot may cut through the whole tangle of plot and counterplot in the Middle East. Men watch for war from Istanbul's minarets.

little more than a drop in the vast supply reservoir of the United Nations. Its importance rests in the fact that it is there, ready to fuel whatever ships, tanks, and planes hold that corner of the world. If it is lost, the United Nations fleets which are struggling now to hold the bases at Capetown, Aden, Suez, Basra, Bombay and Colombo, and to patrol the rich sea lanes of the Indian Ocean must haul their oil the 10,000 miles from Texas or Curacao. It is Britain's greatest strength in this part of the world.

Few Resources in Middle East

The other resources of the Near and Middle East are of minor importance. Turkey is the world's largest producer of chrome, essential for making armor plate, and is bound by a trade agreement signed only last fall to sell its entire exportable output to Britain until January 1943. There is copper in Cyprus, potash in Palestine, and cotton in Egypt. But in no case—except oil—are the quantities great enough to be a major factor in British planning, or even to be of decisive importance to Germany if captured.

In fact, the eastern Mediterranean can't even provide the food and clothing for the United Nations army of 750,000 men spread out from Libya to Iran. Until it became inevitable that Singapore would fall, Australia was supplying the bulk of the food, most of the clothing supplies, trucks, shells and vast quantities of small arms ammunition for the armies of the Middle East. South Africa also participated. Each took full responsibility, so far as their limited industrial facilities allowed, for keeping their own soldiers equipped.

It was the withdrawal in January of many of the Australian troops for service at home that again gave the Axis the advantage in Libya. And now, the threat of Japanese raiders in the Indian Ocean is forcing Britain to make alternate arrangements for food supplies, because the steady flow from the Far East is bound to be slowed, possibly stopped altogether.

Stakes Strategic, Not Economic

So it becomes obvious that, except for oil, the stakes in the Mediterranean and the Middle East are strategic rather than economic.

With India, this area forms the last great barrier to a junction of the Axis partners.

Through the Persian Gulf and the Transiranian railroad it provides a tenuous route over which supplies can flow to Russia.

Suez and Gibraltar, as long as they can be held, bottle Axis ships in the Mediterranean.

North Africa is a barrier to German thrusts toward the South Atlantic or Suez.

If the Axis can be driven out of Libya and kept out of the French colonies, and if Hitler's air strongholds on Crete and Sicily can be knocked out, the Mediterranean can become the main supply route to Egypt and the Middle East, cutting nearly 7,000 miles from the present long voyage around Capetown.

And, finally, as W. T. Kernan points out boldly in his popular new book, "Defense Will Not Win the

War," North Africa and the Mediterranean provide the perfect springboard for an offensive against the Axis through weak and disgruntled Italy.

There is no time for delay. The moment for Hitler's spring blitz is almost here. His customary battle of nerves is already on, despite his preoccupation with a Russian campaign that backfired seriously. A bomb was tossed in the path of the German ambassador to Turkey a few weeks ago. The Bulgarian king visited Berlin, and Sofia almost immediately became openly hostile to the Turks.

Invasion barges are reputedly being massed, not along the English Channel, but along the Black Sea and the Greek islands, some of which are within sight of the Turkish mainland.

It is ominous that, so far, the Russians have not been able to push the Germans back in the south—in front of Rostov and in the Crimea—as they have before Moscow and Leningrad. In part this may be due to the milder climate. But, undoubtedly, it also must fit into a German pattern which calls for a Middle East drive this spring. Hitler still controls most of the north shore of the Black Sea. His planes are already within striking distance of the Russian Caucasus, as well as Turkey and Syria. His armies have had a year to organize their supplies in Rumania and Bulgaria.

Vichy Is Wavering

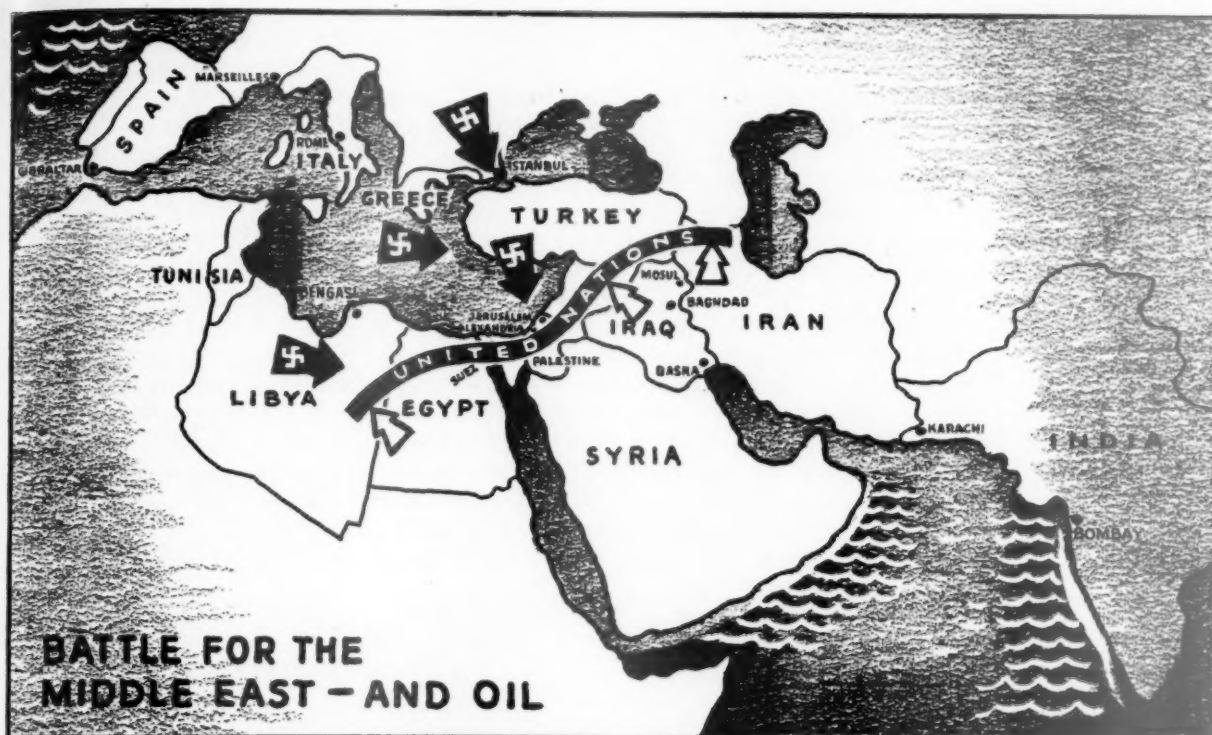
But Hitler's plans are not pinned to the eastern Mediterranean. Despite assurances to President Roosevelt from Vichy, it was an ominous sign when France's battle fleet moved from its base on the north coast of Africa to the great fitting basin of the navy yard at Toulon. And it is ominous, too, that Britain bombed the Paris industrial area last week, for it means that Britain no longer considers it worthwhile to play ball with Vichy.

Apparently, the diplomatic grapevine has passed along to London the news that Pétain is being forced to bow to the Germans on the last "reservations of an honorable peace." In drawing up counter-measures, the United Nations must gamble on all these possibilities.

The United Nations have laid the foundations for the defense of the Middle East, but the preparations must be speeded up. Bombers can fly under their own power down the east coast of the Americas to Natal, Brazil, then cross the South Atlantic to established bases in Africa where they refuel for the long cross-continent flight to Egypt. Fighters and pursuit planes, with a fuel range of little more than 800 miles, must go by ship to Africa where they can be assembled and flown to fronts in Libya, Egypt, Russia, or India. But other supplies—tanks, trucks, guns, munitions, and repairs must go the long route around Africa, a trip which requires two to three months from either British or American docks.

In whatever attack the Axis may make this spring, the Middle East will stand or fall on the supplies that are already there or on the way.

But if it stands, important moves are under way to strengthen it into the active anti-Axis front that it



may ultimately become, though much of the responsibility for the contemplated projects will rest on American technicians, industrial supplies, and skilled labor—all of them already overtaxed by the war production program at home.

Washington Alters Plans

Months ago, Washington announced that it was setting up an assembly and repair base in the former Italian colony in Eritrea, along the Red Sea.

Further to the east, American railroad missions have already landed at Basra, Iraq, to survey the two thin lines of communication that stretch north, one through Iraq to the Turkish border, and the other through Iran to the Caspian Sea.

Basra is a river port where temperatures reach 110 deg. F. in the shade as winds sweep in off the desert sands around it. The port is good but the loading facilities are very limited. A poorly-equipped, single-track, narrow-gauge, railroad can carry limited supplies of freight the 350 miles to Baghdad but there it must be reloaded into the standard-gauge cars of the "Berlin-to-Baghdad line" if it is to move on to northern Iraq, Syria, and Turkey.

Only a few miles to the east of Basra on the Iranian side of the border is the starting point of the recently-completed Transiranian railroad. This four-year old single-track line is a standard-gauge road stretching 865 miles across Iran. Because it threads through 224 tunnels and crosses 4,102 bridges, it cannot be double-tracked in time to be of value in this war. At the end of 1940, the Transiranian had only 80 locomotives and 3,000 freight cars but both Britain and Australia have sent some additional supplies in the last year.

Though the Transiranian is the route over which

supplies to Russia must flow, it does not link up with the Russian lines. A branch of the main Iranian line running westward from Teheran still has not been completed to Tabriz, where it can link up with the Russian broad-gauge line leading to Baku.

All railroads in the Middle East are inadequate in their present state and much of the transportation must necessarily be handled by truck. And many more vehicles are necessary and much work must be done on the roads before motor transportation can approach the important job it did, after many months of planning, over the Burma Road.

The tasks ahead in the Middle East are tremendous but the stakes are great enough to warrant the concentration there of far greater military power than Britain has felt it could spare up to now.

If Hitler is allowed to develop a pincer attack on the Middle East—from Turkey and from Libya—he might take Suez and push through to the ocean to cut off India, Russia, and China from their Allies in Britain and America and swap with Japan the things that will strengthen his war machine for a long showdown with London and Washington.

But if he can be held in Europe this year, while burgeoning allied bases are manned and strengthened, repair shops are built, and railroads prepared for the man-sized job ahead, the tide can be turned.

II. THE ATLANTIC FRONT

Britain faces critical 1942 in a quandary. Though still the heart of a great empire, it has given up the limelight for the last three months to its colonies and Dominions—first HongKong and Singapore, now Burma, India, and Australia. And before many weeks, Egypt may be high-

lighted again if the Axis makes a new thrust for the Middle East.

But there is always the possibility that Hitler will choose to strike again at the British Isles in the hope that, this time, a few weeks of concentrated bombing can force the tight little island to yield.

In the 30 months since the German invasion of Poland precipitated this war, the steady tide of Hitler victories has forced London into a series of lightning policy changes.

During the first eight months of "phoney" war—from September, 1939, to April, 1940—London laid its plans for a long conflict, in which, as the strategy was explained to *Business Week* by British and French officers along the Maginot Line (BW—May 18'40, p15), Britain and France would enforce a blockade against Germany, and fight defensively to hold the Germans at bay until the two Allies could build up their armaments. No offensive was even contemplated until 1942, for Britain had almost no army, France almost no munitions, and even their

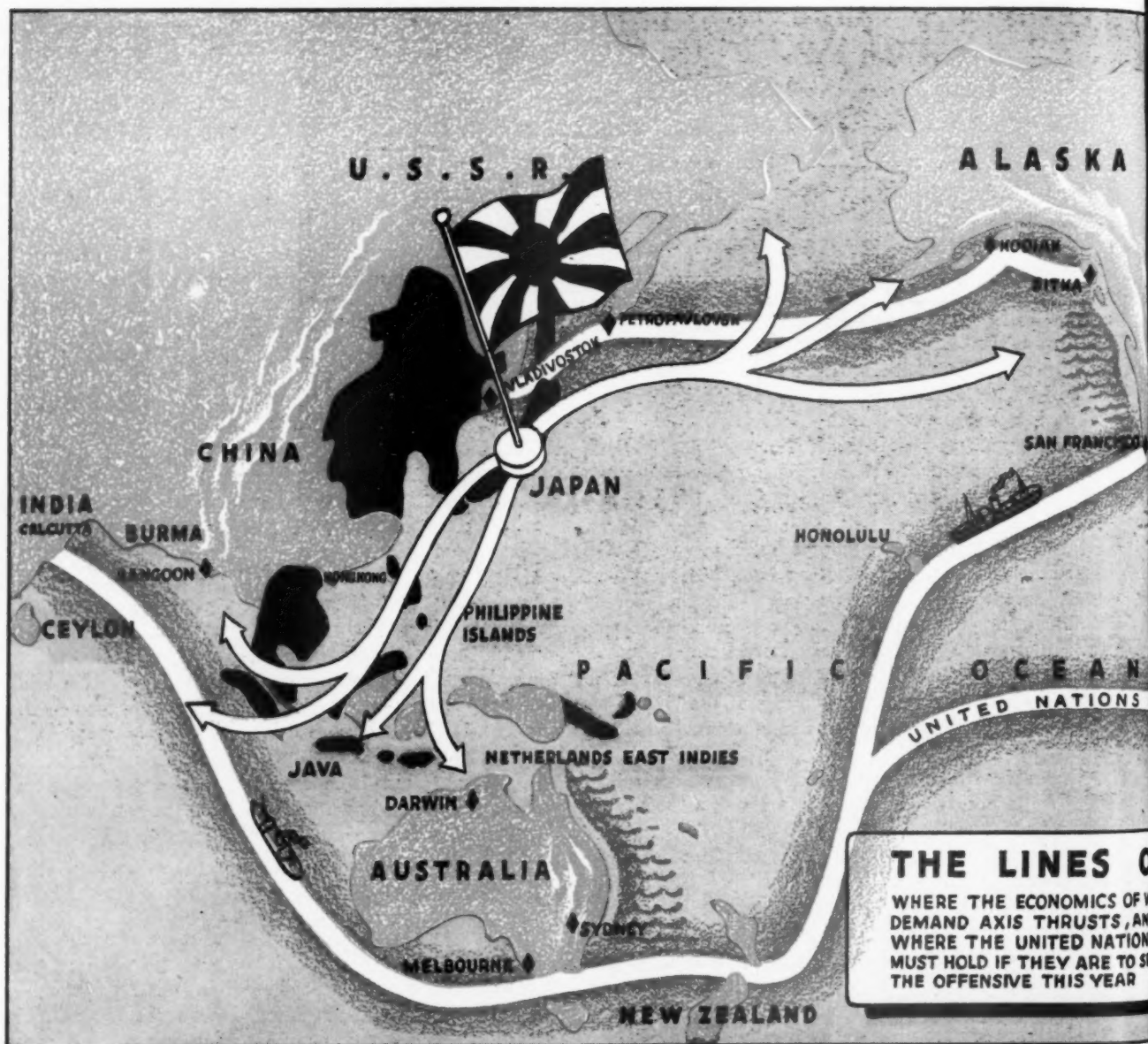
combined air forces were no match for the Nazis. During this whole period the strategy of both Paris and London was to play for time and count on the superior resources of their empires ultimately to give them the power to overwhelm Germany.

Then came Apr. 9, 1940, when over a weekend the Germans swept across Denmark and, a few weeks later, completed their occupation of Norway.

London Alters Plans

This was the first serious blow to London's policy of delayed action. Overnight it shut down one of England's biggest supply sources for butter and bacon—Denmark. And Nazi blitzing in Norway snatched from England's virtual doorstep 1,000 miles of mountainous territory sprinkled with landing fields and harbors from which Hitler could launch air raids and submarine attacks on Britain's supply lines from abroad and base fresh attacks on Britain's east coast.

The loss of Danish bacon and butter and Norwegian



aluminum and nickel plants was more inconvenient than serious to England. And the gains for Germany were inconsequential because Denmark was a food factory as dependent on imported fodder as our new tin smelter in Texas will be on imported ore. But the strategy employed by the Germans in this first drive in Western Europe is worth noting, for it has been employed so skilfully by both Germany and Japan since then that it has caused those serious shifts in the relative raw-materials positions of the Axis and the United Nations which are now forcing a complete overhauling of war strategy (see table, page 40).

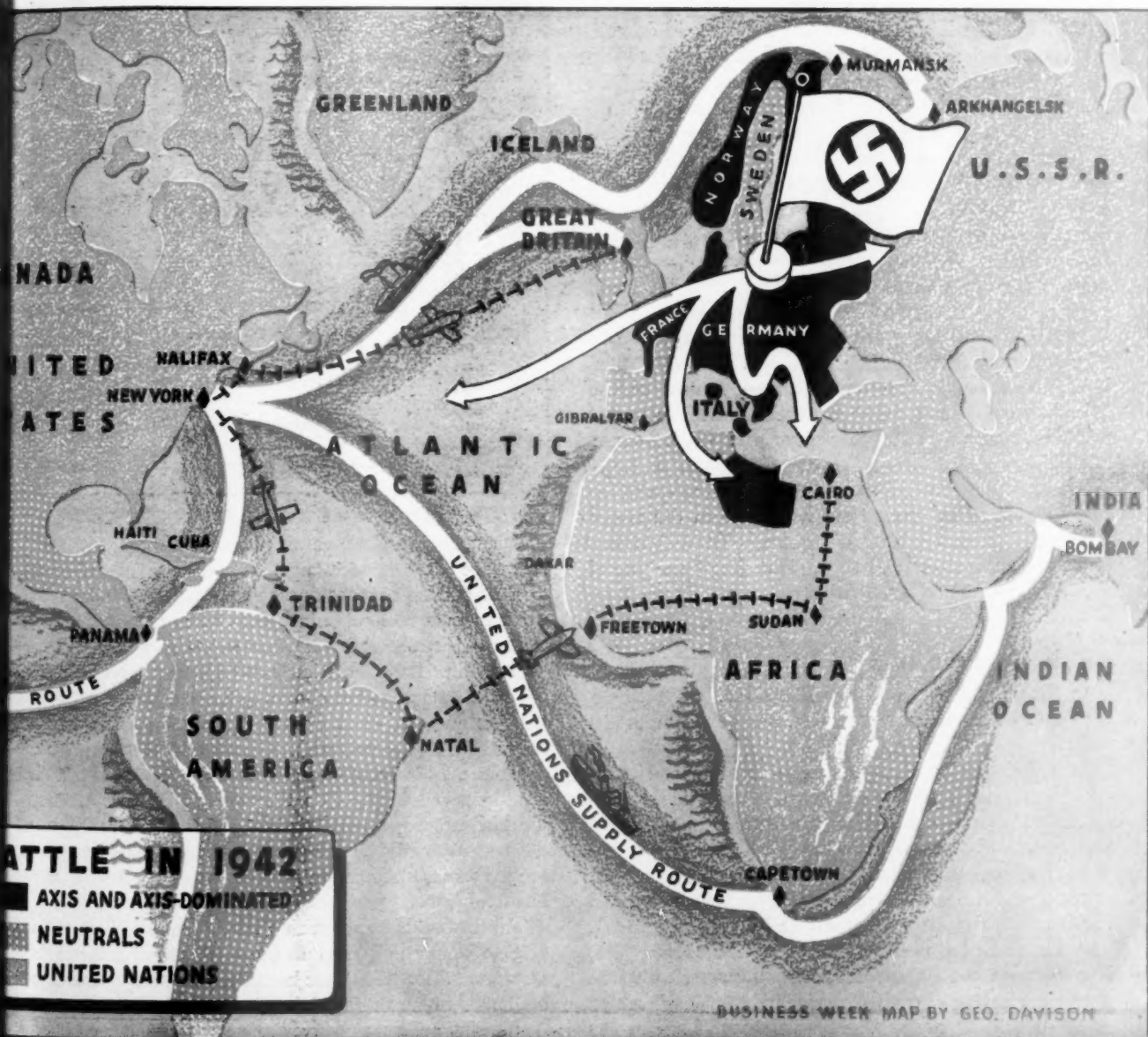
Actually, the April thrust into Denmark and Norway was nothing more than a curtain-raiser for the May 10 blow at Holland and Belgium. This ended in June with the catastrophic capitulation of France and the desperate possibility that Britain, after the terrific losses of material at Dunkerque, could not successfully beat the Germans off if they attempted an invasion. Prime Minister Churchill tersely summed up that crisis when he remarked to

Congress last December in Washington, "Fortunately they didn't try."

The fall of France forced Britain to make its first great change of strategy. Its bases on the continent were gone; the Germans held more than 3,000 miles of coast facing the Isles; Italy had entered the war with a fleet just when Britain was forced to take over the patrol duties in the Mediterranean and southern Europe which had been handled by the French.

War Forces Economic Shifts

Few people realize how serious were the economic problems that the British had to solve in that summer and fall of 1940, just when the German air blitz was at its peak. The English had lost in Belgium one of the largest zinc refineries in the world, and important copper-refining capacity. France had provided much of the bauxite from which British aluminum was made, and large quantities of refined aluminum. A great deal of special high-grade steel also came from France. Holland had been both



milkman and green grocer to the London housewife. And a friendly France had kept up a steady flow of fresh fruit and vegetables across the Channel to the British market.

For the first four or five months after Dunkerque, old plans were tossed to the winds and Britain went all-out to replace the equipment left behind in Belgium and France, and to find new sources of supply to make up for those lost on the continent.

It was in the midst of these critical months, when Britain turned every available backyard repair shop over to the making of shells, and skilled workers were spending as much as 80 hours a week at their machines, that London managed to build up an army in Egypt big enough to undertake two major campaigns—to drive the isolated Italians out of their new empire along the Red Sea, and to tackle the Axis in Libya where it was menacing the Mediterranean supply line and threatening Egypt and the Suez.

Nazis Win Balkan Victory

The Ethiopian campaign succeeded without much difficulty, but the Libya drive collapsed early in March, 1941, when Britain decided to support the Yugoslavs and Greeks and had no other reinforcements to spare. The ill-fated Balkan campaign collapsed in less than a month.

So, by May of last year, Germany was completely entrenched in all of Europe except Sweden, Spain, Portugal, and Switzerland. The French campaign had paid for itself in booty—especially oil, locomotives, trucks, modern factories, and an enormous new labor supply. Yugoslavia provided the Nazis with Europe's largest copper mine (originally owned by the British), some lead and bauxite, and quantities of food. New supplies of timber helped to feed a vast synthetic-textile industry. When Rumania capitulated without a struggle, Germany doubled its oil supply and uninterrupted control of the Danube from Vienna to the Black Sea provided a badly-needed transport route to relieve the overburdened railroads.

Then, in June and just when Britain feared that Germany would strike south from new bases in the Greek islands and Crete at a badly disorganized Middle Eastern army, the Nazis struck at Russia. This turned the tide of war to the east and gave Britain a breathing spell on all fronts.

British Industry Battles On

In the six months from June 22 to Dec. 7, 1941, England fought its main battles on the home industrial front.

In a series of ruthless but necessary moves, civilian consumption of all kinds of things—from washing machines to shoes—was cut to the bone. Food rations were extended to more items and tightened. In a surprise weekend move last June, clothes rationing was introduced to a shocked public that had always prided itself on its sartorial perfection (BW—Jan.31'42,p34).

Before industry realized how drastic the blow was, London sent out invitations to the business leaders in every line asking them to special industry conferences (BW—Dec.20'41,p30). Once assembled, London ex-

Have and Have Nots In 1938, and in 1942

Japan's conquest of rubber and tin and Germany's accumulations of industrial raw materials have shifted the balance of economic power in many significant ways—and set the stage for a dramatic swap if the anticipated Middle East drive to join Axis forces is successful. This is revealed by an examination of how the Axis and the United Nations (as now constituted) split the available world production of key commodities, first in 1938 and now in 1942. The figures below are percentages of total output, based on 1938 production. Figures given on ores represent percentages of metal content (in the case of chrome ore, percentages of chrome oxide content).

	1938		1942	
	Allies, Russia, and Americas	Axis Powers	United Nations	Axis Powers, Conquered Territory
Wheat	86.5%	13.5%	65.5%	34.5%
Rye	75.5	24.5	41.7	58.3
Coffee	100.0	....	92.5	7.5
Cocoa	100.0	....	89.2	10.8
Sugar	82.3	17.7	56.3	43.7
Butter and margarine..	76.0	24.0	50.6	49.4
Cotton	99.2	0.8	97.4	2.6
Flax	93.2	6.8	64.2	35.8
Jute	99.4	0.6	99.4	0.6
Wool	96.8	3.4	88.0	12.0
Rubber	100.0	....	8.9	91.1
Wood pulp	88.6	11.4	67.1	32.9
Cement	66.3	33.7	48.4	51.6
Coal and lignite.....	68.0	32.0	54.6	45.4
Crude petroleum.....	99.6	0.4	93.3	6.7
Steel	75.3	24.7	56.9	43.1
Iron ore	92.7	7.3	55.4	44.6
Manganese ore.....	90.0	10.0	65.1	34.9
Nickel ore.....	100.0	....	97.1	2.9
Copper ore.....	94.0	6.0	90.9	9.1
Lead ore.....	91.6	8.4	78.1	21.9
Zinc ore.....	85.0	15.0	71.5	28.5
Tin ore.....	90.6	9.4	26.8	73.2
Chrome ore.....	97.3	2.7	83.1	16.9
Bauxite	74.8	25.2	34.2	65.8
Potash	38.4	61.6	14.2	85.8
Salt	76.7	23.3	57.2	42.8

plained that the shortage of labor, machinery, and storage space made it necessary that producers of the same kind of goods—almost none of whom was working near capacity once the rationing program had started—concentrate their production in a few key plants which could utilize their facilities to the greatest advantage.

Those that were not chosen as nucleus factories were to close and free their workers for other jobs and turn over their plants to war production if they could be economically converted. Each industry was given a time limit within which to do the job voluntarily. If they did not succeed in reaching the degree of concentration deemed necessary by the government and within a prescribed time, London authorities were to step in and finish the job.

The British did an amazing job in a short time. Out of 30,000 clothing manufacturers before the war, for instance, a bare 1,200 have been designated by the Board of Trade to make Britain's clothing for the duration. And, using a Glasgow survey as a key to what happened

all over the British Isles, out of 19,000 retail shops operating just before the war, 3% closed in the last four months of 1939, another 6% during 1940, and another 8% in the first half of 1941.

Nothing since the fall of France has so drastically changed Britain's problems as the fall of Singapore and the loss of most of her possessions east of India.

So confident were the British of their ability to hold Singapore that they are reported to have laid in virtually no rubber stocks. When it became evident that ship arrivals from the Far East would be halted, a planned increase in the butter and sugar rations were dropped immediately, and cheese rations were cut on Feb. 2 from 3 to 2 oz. a week per person.

Australian Supplies Missed

But there are other places where the Empire's war effort is hit even more directly. British, South African, and Canadian arsenals must now provide the 750,000 men in the Middle East with the 70,000,000 rounds of small arms munitions a month which had been coming from Australia. In addition, they must prepare to rush supplies to India where, heretofore, Indian arsenals were working for other war fronts.

Shipping may soon have to be convoyed on the long haul around Africa, unless the Mediterranean can be made safe for more than sporadic service.

England must keep three main fronts in mind as she lays her plans for 1942: India, the Middle East, and the home front.

In India she is threatened by the Japanese in Burma, by the possible refusal of the Indians to fight unless promised freedom or full Dominion status after the war, and by the threat of a German pincer from the west if Russia fails to hold in the Caucasus or if a Nazi thrust in the Middle East is successful.

The supply problem is formidable because India must get its planes, most of its tanks, and much of its heavy ammunition from arsenals in Britain and America.

But if, by concentrating on the Middle East, Britain can hold the Germans out of Asia and Africa, and free the short Mediterranean supply route of Axis air thrusts, its task will be simplified.

Can Britain move some of its 4,000,000 soldiers and a part of their modern equipment to the Mediterranean without running undue risks to the home citadel of the Empire?

Or can the United States provide the limited number of technical specialists and the important quantities of planes and tanks necessary to seize this lifeline?

Or can they together work out a plan which will take full advantage of the long thin supply line of the Japanese in the East, and of the preoccupation of the Germans with the Russians?

III. THE RUSSIAN FRONT

Russia is the great question mark of 1942, as it has been almost continuously since the summer of 1939 when Stalin shocked the world by signing a non-aggression pact with the man who, for five years, had been

assiduously, and with considerable success, peddling his anti-Comintern pact around the world.

It was this unexpected deal between Berlin and Moscow which precipitated the Second World War. Hitler knew that, when he attacked Poland, Britain and France would go to war. He was not in the least afraid to risk a showdown with these two "bloated Western Powers," as Nazi orators blatantly branded them, but he dared not risk a two-front war until he had tried out his blitz tactics and the men whom he had chosen to direct them. Also, he lacked the equipment to fight on two fronts at that stage of the game, particularly when his reserves of raw materials were so puny.

Hitler made his first overtures to the Russians in April, 1939. By then, seven months after the Western Powers had given Russia the cold shoulder by not inviting a representative from Moscow to participate in the Munich conferences, it was plain that Europe was on the road to war. (London quietly let the report get about that Russia was left out because it would offend Hitler to have representatives of a Communist government participate.) Even the British Prime Minister who, after Munich, had declared that the new pact guaranteed "peace in our time," realized by March, when Germany forced Prague to capitulate, that war was not far away.

Stalin on the Spot

Stalin was in a quandary. For nearly ten years Russia had been participating actively in the League of Nations, and its able Foreign Commissar, Maxim Litvinoff, was one of the most active advocates of collective bargaining in all Europe. Through his efforts, Moscow had made a mutual-aid pact with Czechoslovakia, which, in turn, was linked closely to France by the chain of pacts signed after the last war to guarantee that Germany could never again launch forth to conquer the continent. But when the French and British ducked their obligations at Munich and when Czechoslovakia, keystone of the whole Allied defense structure in Eastern Europe, was abandoned, Russia was left out in the cold.

In addition, well-founded rumors were abroad that neither London nor Paris would be sorry should Hitler decide to turn east, for there were more than a few political leaders who believed that this might be a means of getting rid of two undesirables.

It was in this atmosphere that Hitler took the bold step of appealing to Moscow for a deal. And Stalin, realizing that Russia was not then prepared to take on an enemy of the stature of Germany, particularly since it almost surely meant a simultaneous attack by Japan, decided to play ball. The nonaggression pact of August, 1939, resulted, followed by a trade deal, the most spectacular part of which was an agreement by the Germans to provide Russia with considerable quantities of munitions as well as equipment to make oil from coal. In return, Russia agreed to supply Berlin with a million tons of oil a year and considerable quantities of raw cotton.

Within five days after Foreign Minister von Ribbentrop had flown back to Berlin with the document in his pocket, Germany attacked Poland and the war was on.

No one who visited either Berlin or Moscow during the

22 months before Germany tore up the pact and marched across the Soviet borders believed that the deal was anything more than a colossal poker game in which two shrewd bargainers played their cards boldly. But whatever qualms Moscow may have had, it gathered in the chips that came its way—bits of Finland, the three little Baltic states, and half of Poland. The pickings were slim for all of the territories were poor but they were a new barrier to the Germans which proved valuable later.

Hitler's plan of conquest worked with frightening success. Seven months after the Polish blitz, Germany was in Denmark and Norway, and two months later Paris had fallen and the air blitz on Britain was beginning. And then there was a lull while Hitler took stock.

Berlin Gains Confidence

It was a different Germany which faced the Soviet Union on the first anniversary of the nonaggression deal. No longer were Berlin planners shuddering that they might be cut off from the all-important deliveries of Swedish iron ore, Luxembourg steel, or caught with a shortage of aluminum for the ever-expanding airplane program.

The successful occupation of Narvik assured them of all the Swedish ore they could haul in either summer or winter. Denmark, Holland, and France had given them vast supplies of foods—butter, bacon, chocolate, cocoa, coffee, and vegetable oils—which helped make Germany's second war winter less dreary than the first. Norway's refineries were quickly dismantled and moved to Germany. Badly-needed machinery—some of it the very equipment the Nazis had sold the Dutch for gold only a few months before—was dismantled and moved back to the Reich.

There were no oil fields in the West, but the oil captured by carefully planned attacks which allowed the enemy no time to destroy storage tanks more than covered the supplies consumed during the campaign.

Axis Swallows the Balkans

During the fall of 1940, Berlin boldly pushed its way down the Danube. After all, France, the defender of the Little Entente, was gone, and Britain was too occupied to do anything. Rumania, after struggling weakly, finally capitulated, giving Germany control over fields which produced annually nearly twice the production of the Reich. Then Bulgaria yielded to the pressure from Berlin and Germany practically stood on the Bosphorus.

But not everything was running according to schedule. Russia had protested the German drive down the Danube and when the capitulation of Rumania became inevitable, the Russians rushed into the former province of Bessarabia, thus driving a wedge between the Germans and the old Russian borders similar to the one in the north.

And Yugoslavia, after a weak government had all but swung the country into the German orbit, suddenly ousted the Nazi authorities from Belgrade.

There is little doubt now that Berlin had planned to strike into Russia late in April or possibly early in May, but the Yugoslav flareup delayed action until June 22. But when the Germans moved they were the assured masters, not only of Yugoslavia and Greece, but of the

vital islands of the Aegean and of Crete. Whatever the failure of their blitz over England, London had been bitterly humbled in the Mediterranean, for while the Nazis were sweeping through the Balkans to the Aegean, Axis troops also had reversed the flow of battle in Libya and it looked as though England might even lose Suez.

But instead Hitler turned to the east.

What's going to happen along the 2,000-mile Russo-German front in the critical spring of 1942 is still a question, but it is bound to have a tremendous effect on the course of this war.

After six months of hard-won advances which swept the Germans to the outskirts of Leningrad, to hills from which the German commanders could sight the spires of Moscow, and to Rostov, Russia's great industrial city which is the gateway to the vital Caucasus region, the Germans found they could not finish their job before winter caught them. Since then, they have figured in a series of retreats which has pushed them back from Stalin's great arsenals in Leningrad, and threatens to land them—before Russia's latest offensive ends—practically on the old Polish border.

Russian Campaign Backfires

But the campaign has been terrifically costly to the Russians as well as the Germans. They have been forced to destroy some of their most important industrial centers before yielding them to the Germans, and they have lost control over half of their manganese deposits, one of their greatest iron ore and coal fields, and over the richest farming community in the Soviet Union. In a scorched-earth policy which has known no equal in any part of the world, they have destroyed the great Dnieperstroy dam—pride of all Russia, burned such industrial giants as Rostov, Kharkov, Kiev, and Krivoi Rog, and abandoned their great collective farms in the Ukraine, though not until they had driven away most of the livestock and tractors.

Without knowing the exact production of their great Ural industries, it seems inevitable that the Russians have been temporarily deprived of nearly half of their iron and coal reserves, probably half of their bauxite and the refineries which convert it into aluminum for the airplane industry, and at least half of their manganese resources. Few of these can be of value to Germany for at least another year, nor can the farmlands of the Ukraine, for the Reich has been too hard-pressed managing its retreat and meeting the continued Soviet attacks to spare the men, the machinery, or the transportation facilities needed to rehabilitate the occupied country. But if the Nazis can hold the region for another year, and if they can force Stalin to retreat to the Urals, it will be another story.

Critical days are ahead along the Russian front. It is significant that the Germans have yielded very little ground at the southern end of their 2,000-mile front. They still hold a line that is within striking distance of Rostov, and they have yielded very little ground on the Crimean peninsula. If they can continue to hold these lines, they undoubtedly will utilize the first warm, dry spring weather for a quick dash toward the Caucasus—Russia's Achilles heel.

In this one small area are located 80% of Russia's oil

wells. From these fields, second only to the great producing areas of the United States, come the gasoline and lubricating oil which keep Russian planes in the air, Russian tanks at the front, and—no less important—Russian tractors operating on the great collective farms of the Volga valley and southern Siberia in a feverish effort to make up for lost Ukraine output.

It is already evident that the Germans may try in one bold stroke to drive for the oil of the Caucasus and for a grip on the big British fields in Iraq and Iran. Without its oil, Russia could certainly not keep up any indefinite offensive against the Germans, even though Moscow and Leningrad continued to hold out. And if the same campaign which cut the Russians off from the great Grozny and Baku fields between the Caspian and Black Seas also succeeded in pushing the United Nations out of the Middle East, there would be little hope of dislodging the Axis from that part of the world for a long time.

Stalin has another great worry as he battles to delay the anticipated spring offensive of the Germans. It is that Japan will strike at vulnerable Vladivostok just when he is too occupied in the West to do much to strengthen his Far Eastern position.

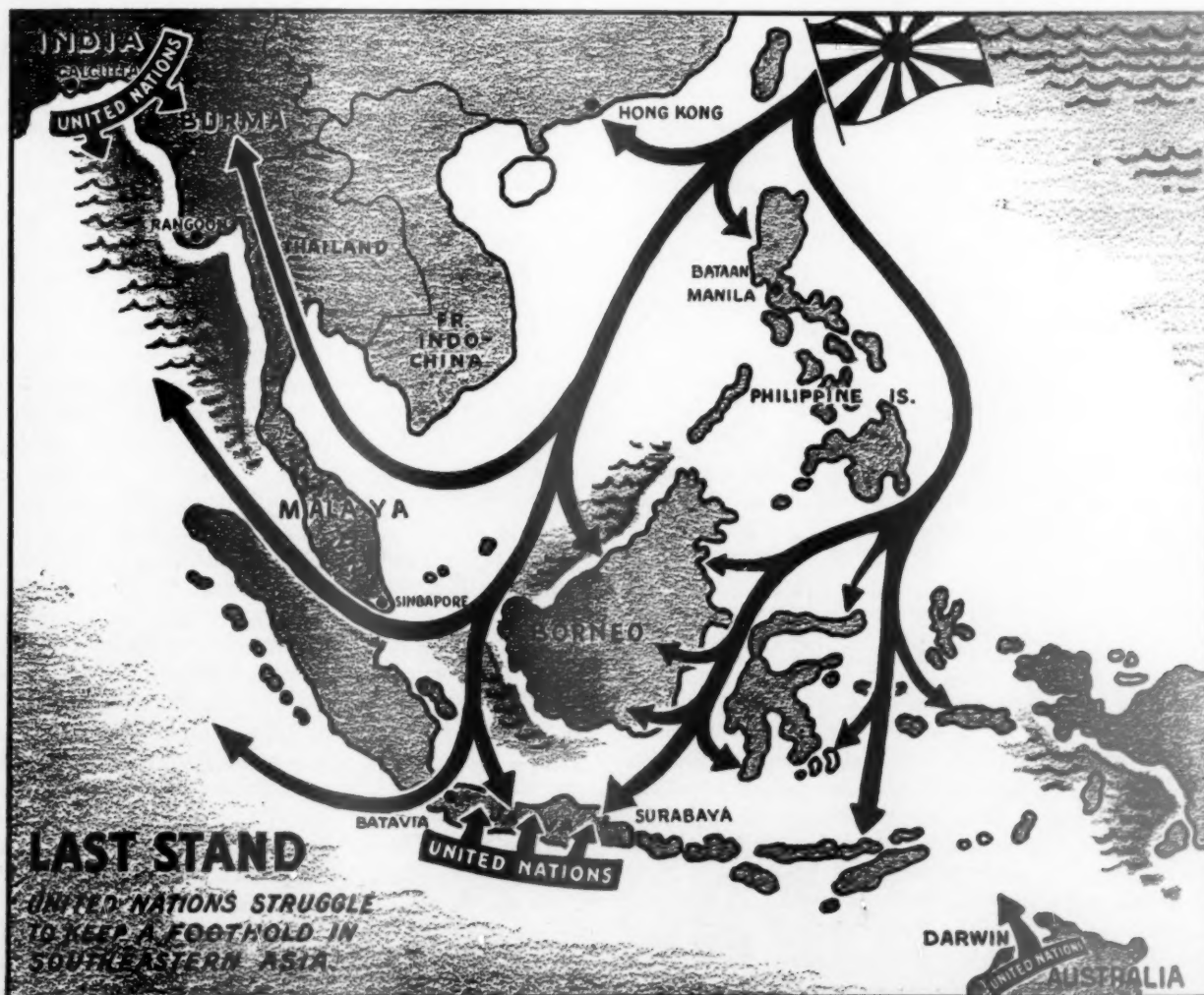
Moscow reputedly has more than 100 submarines in Far Eastern waters. Despite the crisis in the west, fast Russian bombers are still stationed up and down the

long tongue of land which stretches to Vladivostok, and along the entire Manchukuan border. These are forces which could make a real showing with the Japanese, for Nipponese troops are also spread very thinly over their long new lines of empire. But the Russians are not likely to fight until they are attacked or until the United States has strengthened its position in Alaska and in the Pacific. They regard Germany as the principal Axis enemy and have decided to concentrate on fighting the war in the west to a finish.

Reports during the last few weeks of masses of fresh Russian troops being pushed up to the front is no surprise to people familiar with Stalin's rigid training program for every Soviet citizen during the last 18 years. Every male Russian has gone through the country's compulsory military training service. And in every factory and on every collective farm, women have been trained for more than five years to operate the drill presses and the tractors. The preparation was for just such an emergency as the Soviets now face.

IV. THE FAR EAST FRONT

A bomb lashed to a railroad track in Manchuria in September, 1931 started the war in the Pacific which reached Pearl Harbor Dec. 7, 1941 and engulfed Singa-



pore, Britain's business outpost in the Orient, a little more than two months later.

In the wave of nationalism which swept Japan in 1931 when the country was beginning to suffer seriously from the loss of its foreign trade and army radicals were clamoring for territorial conquests to assure markets for Japanese industry, a little group of army officers decided to stage in Manchuria a train wreck in which important Japanese personages were involved. They hoped that it might set off a quick war which would win this rich and strategic territory for Nippon.

Japanese Diplomats Cooperate

Cooperative Japanese authorities immediately turned the wreck into an international incident and demanded that Japanese troops be permitted to reinforce the handful of police who had previously been allowed to guard the Japanese-owned railroads. China refused to agree and called for international cooperation to stop the Japanese. Washington protested vigorously, London faintly. Japan took heart and a year later had overrun the country. It was really Tokyo, rather than Rome or Berlin, which set the pattern for the international hold-ups which precipitated the Second World War.

Manchukuo, as the Japanese called it, turned out to be a rich plum for the Japanese. They already owned coal and iron mines in the country before they grabbed it. But, once the government was in their hands, they boosted their investment, set up big refineries to extract oil from shale, encouraged sheep herding to free Japan's mighty textile industry from dependence on a not-too-friendly Australia, and tried to grow cotton.

It was no surprise to foreigners who watched the Japanese moving in on Manchukuo when they saw the war pushed south beyond the Great Wall into the rich markets of North China. Manchukuo gave Japan vital raw materials. North China was the complement—a vast area teeming with industrious people and already developed into compact, highly-developed markets.

Nippon Develops Heavy Industry

While this was going on, moreover, important changes were taking place within Japan. With the loss of its markets for silk and cotton goods during the great depression, Tokyo was having trouble securing the foreign exchange necessary to buy the scrap iron which keeps Japan's steel mills operating, copper for its big electrical industry, and the machine tools which the nation had always bought from Germany and the United States in great quantities.

When it could no longer fill these needs abroad, and when the acquisition of a great undeveloped region in Manchukuo came along, Japan seized the opportunity, dug its own raw materials out of its newly-acquired territories and turned them into the equipment needed for the great development programs which had been laid out. Spectacular changes began to be evident. Light industries were standing still, or contracting, but the country was building the foundations for a vast heavy industry, lifting its labor efficiency nearer to Western standards, and carefully working out Four-Year Plans

which would ultimately turn Japan into a great industrial power.

It was in the midst of this program in 1937 that Tokyo launched its second great attack on China, the drive which was to continue until it pushed the Chinese government out of Nanking and, later, to the interior fortress of Chungking.

For two years Tokyo fought on, never fully conquering the Chinese but always holding the whip hand by its control over the rich port cities and the main channels through which foreign military supplies could reach Chiang Kai-shek. Then the war broke out in Europe, Tokyo tightened its relations with Berlin, and Japan settled down behind a tightly-drawn veil of secrecy to prepare for its vital role in the struggle which was just getting under way.

While the Western Powers were absorbed in the conflict in Europe and were content to believe that the Nipponese were bogged down in China and the nation completely exhausted from its eight years of fighting on the Asiatic mainland, Japan was building on an unprecedented scale those industries which are necessary to fight a war. Between 1931 and 1937, the country trebled its steel output, and then went on to enlarge it some more. In the same years, the number of shipbuilding workers jumped from 160,000 to 600,000. Huge aluminum plants were built to supply the materials for an infant airplane industry.

Tokyo Has Long-Term Plan

Not all of Japan's efforts were confined to home industries and to the speedy development of the raw materials in conquered China. Far to the south, Japanese mining engineers were roving the length and breadth of Malaya, the Philippines, the Netherlands Indies, and Australia, searching for the raw materials they needed for Japan's new industries and struggling to buy an interest in mines already operating or to win a concession in new ones.

Long before 1941 the little men from the north owned rubber plantations in Malaya, Borneo, and Sumatra. The biggest and most modern fishing fleets in the Philippines and Malaya belonged to them. One iron mine in Malaya, almost under the guns of the great British naval base at Singapore, at one time provided the small Japanese steel industry with 40% of its iron ore. But by last year, the 2,000,000 tons of iron ore from Malaya and 1,200,000 from the Philippines barely covered 30% of Japan's imports.

This is the Japan which attacked Pearl Harbor on Dec. 7, swept through the Philippines (excepting Bataan) in a month, drove the British out of Singapore in ten weeks of fighting, and today are mopping up the Dutch for the control of one of the richest colonial areas in the world and threatening Britain's century-old hold on the richest of its colonies—India.

After Singapore and the Dutch Indies, declare the spokesmen in Tokyo, Japan intends to grab control over India and Australia. It's too much to believe that they intend to try to absorb either vast country. But their hold on Burma, Singapore, a few bases on the sea-coast, and on Ceylon might make it impossible for



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Britain for a long time to use either country as a base for a major attack on the Japanese. And, if their plan carries through, a few bases in the Indian Ocean are all that are necessary—now that they have the oil of the Indies and of Burma—to make their great coup, a juncture with Germany in the Middle East.

It was Japan's new economic conquests, rather than any that Germany has picked up in its successful two-and-a-half years of war, which has suddenly revealed to the world the dangerous shift which is taking place in the lineup of the "have" and the "have not" nations.

Japan Is Over-Extended

But there are tremendous weaknesses in Japan's position, despite these spectacular gains.

Long before it reached Malaya, Japan had more rubber than it could possibly use at home. There are almost no automobiles in Japan, and the country has no time to make them for China where the great distances would make them practical. And not all of the canneries of Japan could use the vast supply of tin that is now in Nippon's hands, along with the great tin smelters at Penang and Singapore.

While its conquests have brought it oil, iron ore, bauxite, chrome, manganese, and nickel to replace the supplies formerly imported, Japan is in no position to capitalize on its gains unless it can win time to develop them or can use them to bargain itself out of the war to its own permanent advantage.

Japan's steel mills, despite the tremendous gains of the last ten years, still produce no more than 11,000,000 tons a year, compared with nearly 90,000,000 in the United States. And its combined machine-tool production and imports as recently as 1940 were valued at only \$70,000,000, compared with United States production last year worth more than \$750,000,000. There is a shortage of skilled labor which has been accentuated by the withdrawal of more men for the garrisons and the armed forces which now stretch for thousands of miles through loosely-held new conquests in southeastern Asia. Airplane output, despite earlier underestimates, undoubtedly is not greater than 1,200 a month, compared with nearly 3,500 in the United States.

No Shortage of Planes—Yet

Its shipping is under a terrific strain. It is still maintaining an army of a million men in China along a front stretching from Manchukuo to Yunnan. From Tokyo to the active fronts in Burma and Java it is more than 3,000 miles. While the British left their tin refineries undamaged, and much of their mining equipment ready for immediate use, the Dutch are doing a more thorough scorched-earth job, with the result that the Japanese probably will have to carry most of their oil home for refining.

Despite the glory of having humbled the United States and Britain in one of the most daring adventures in history, and in spite of the tremendous potential economic power which has fallen into Japan's hands, Tokyo must face 1942 with some qualms.

If it can make a junction with the Germans, and maintain it long enough to swap some of the surplus products

it now controls, its position can be vastly improved. For Germany, despite the strain of fighting on two fronts in Europe has the industrial capacity to make the most of the sounder but less spectacular gains it has made in the last two years. Berlin can undoubtedly spare planes, oil refining equipment, machine tools, and possibly a few technicians if it can get in return the things which Japan now has to offer.

But, unless the Axis succeeds in maintaining this connection and unless Japan can dislodge the Russians from their hold on the seaports and air fields which threaten to provide a base for cooperative United Nations action before the year is over, Nippon's position is precarious. 1942 is unquestionably a critical year for Tokyo.

V. THE HOME FRONT

This is the situation which confronts America in the critical spring of 1942. The war almost certainly will not end this year, but whether we win or lose ultimately will depend on how this country does its job in the crucial months just ahead.

The tasks that confront American business are plain.

General Wavell's little desert army proved twice in Libya that—when properly equipped—it was a match for anything the Axis could put in the field.

The Chinese only a few months ago at Changsha demonstrated that they can outfight the Japanese whenever they are not overwhelmingly outmatched with planes and tanks.

And the mechanized Russian armies, at the very beginning of their struggle with the Germans last year, broke the myth of the invincibility of Hitler's panzer divisions and blitzkrieg tactics.

The grim events of the last few months—which this report has attempted to interpret in their long-term perspective—make it plain that we can no longer afford to spend our efforts planning new factories which will be in production next year, or later. Like the British after Dunkerque, we need to make the most of what we have now. And, like Britain, we shall probably be surprised at what we can do with what we already have.

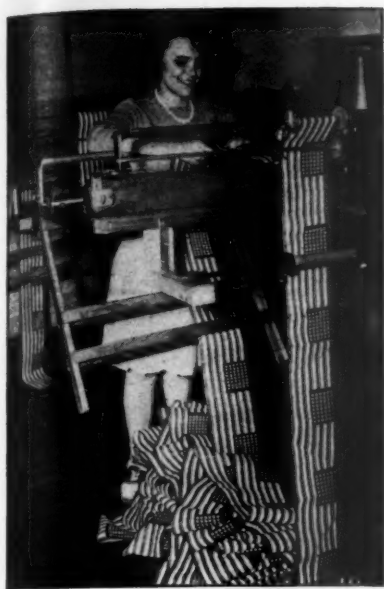
The challenge is clear. Donald Nelson summed it up for American business in his first speech as chief of the War Production Board:

"Every weapon we make today is worth ten that we might produce next year; for this year—1942—is the critical year in the existence of the United States."

REPRINTS AVAILABLE

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Flag makers are turning out the Stars and Stripes faster and faster these days to keep pace with the increased military and civilian demand.

Boom in Flags

War causes rush of new orders, but demand for quick deliveries is the thing that's really causing the pinch.

The wave of old-fashioned patriotism that swept the country after Japan's attack in the Pacific brought sudden pressures to the flag industry. A deluge of new orders, along with insistence on quick deliveries, caused reports of threatened shortages and need for priorities on flag materials. Flag manufacturers generally deny and deplore scare stories. While admitting a sudden and violent bulge in business, flag makers assert that deliveries will be met though they may be somewhat late. They are anxious to scotch rumors that may encourage panic buying.

With the exception of silk, there is no shortage of textiles necessary for flag manufacture. Since silk stocks are low, supplies of silk flags are diminishing toward extinction. Instead of this Japanese raw material, the high-class American flag will hereafter be made of rayon or other domestic yarns.

• **Metal Items Scarce**—About the only place the war pinch is really felt is in metal accessories; that is, eagles, balls, other decorative incidentals containing copper, and steel flag poles. However, no industry move for priorities has yet been made. It is felt that wooden poles can substitute for steel till the shooting

subsides and maybe the brass that has gone into the fancy flag fixings can better be used in shell casings.

This year flag makers followed their usual custom of going after orders during the period from August to December. Deliveries traditionally are made from January to March. Most seasonal orders were booked by the time war was declared. Immediate effect on the trade was not only additional orders but a grand rush from all the 48 states for immediate delivery.

• **Sudden Strain**—Biggest outfit in the industry is Annin & Co., New York. Col. Louis Annin Ames, head of the company, estimates that the U. S. entry into the war "added 50% to the burden on the manufacturers." This doesn't mean a 50% increase in demand but measures the pressure for current deliveries.

The Annin company was founded by a couple of Scots, Edward and Benjamin Annin, in 1847—just in time for the Mexican war market. It makes all sorts of religious, fraternal, and special banners but the bulk of its business is flags. Normally 50% of its output is American flags; since the Japanese attack the percentage has jumped to 75%.

• **Germans Displaced**—Annin also supplies flags to 72 countries, including Canada and the Latin American nations. Formerly the Latin Americans got their flags from Europe, mostly Germany. Annin reports that his Latin American market has increased 100% since September, 1939.

The management tries to keep its feet on the ground as it puts more and more flags to the breeze. Despite the feverish war demand, the company is still producing Confederate flags, a big item for the southern trade. And it wouldn't turn down a special job such as the 250 by 90 ft. flag it made for the J. L. Hudson Co., department store in Detroit some years back. But maybe it wouldn't quote \$2,500, which is what that one cost.

• **Prices Are Higher**—Flags are made from cotton, wool, rayon, silk. While textiles (excepting silk) are obtainable, costs have jumped. Print cloth (cotton on which cheap flags are printed) has gone up from 5½¢ a yard, to 8½¢ in the past year. Labor is higher and scarcer too. Together these factors have raised the retail prices of flags from 20 to 25%.

The U. S. Census gives the 1939 value of "flags, banners, badges and similar emblems" as \$6,757,000. For flags and banners alone this is admittedly too high. There are 132 manufacturers in the flag industry which employ around 3,000 workers. However, the Association of American Flag Manufacturers lists only eight firms—four in New York, two in Pennsylvania, two in California. It is claimed that these eight do 95% of the total business.

• **Flags for Army**—Military expansion accounts for much of the increased flag

WHAT A DIFFERENCE WHEN CARBON PAPER STAYS FLAT

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Heard the latest Ford Story?



Axis ears will find little humor in the production story of Ford Motor Company of Canada, Limited. Now on a 100% war basis, Ford of Canada (largest single source of mechanized transport in the British Empire) is rolling out grim numbers of workshop units, scout cars, ambulances, trucks, and fighting units like the famous Universal carrier above. And they're coming faster every day.

At no cost to the Government, Ford schools are teaching Army men the *mechanics* of military transportation—have trained over 12,000 women in the care and operation of ambulances and "home front" trucks and tractors.

That this vast program of making and training has come so far, so efficiently, is a tribute to the *business* end of production as well as to the assembly lines... Ediphones are to the office what lathes are to the shop. In the dictation of correspondence, orders, memoranda and other written and spoken work, Ediphone Voice Writing increases executive capacity and eliminates waste time. And in today's war schedule, time is more precious than money.

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demand. About one-tenth of Annin's orders come from the government. The Army depends mostly on private industry for its flags but does make some of its own. Recently, for instance, the Philadelphia Quartermaster Depot started work on 10,633 flags—ranging from bunting Union Jacks to fine silk organization flags—for various branches of the service. The Navy makes its own flags at two naval flag manufacturing plants, at Brooklyn and Norfolk.

Our entry into war increases the vigilance of patriots who guard against misuse of the flag for advertising or other commercial promotion (BW—Mar. 15 '41, p. 32). The United States Flag Association, headquarters Washington, D. C., stimulates display of the flag and guards against desecrations. A less articulate group, the American Flag Association, also deserves a bow. This small organization, composed principally of lawyers, promoted the passage of the model law which now protects the flag in all the 48 states. Policy of the campaign was to make enforcement a local responsibility instead of federal.

Redwood Gains

Industry is cashing in on markets opened up by diversion of other materials, such as steel and cement, to war use.

California's redwood industry can be listed high among the war's indirect beneficiaries. It is an outstanding example of cashing in on markets vacated by other materials that have been diverted to defense uses.

The Redwood Assn., representing 95% of the total cut, recently announced that its members finished 1941 with a production record of 463,000,000 bd. ft. as against 364,000,000 bd. ft. in 1940. This showing has been made despite loss of redwood's major customer, the residential building contractor. And indications are that 1942 figures will be limited only by capacity of the mills.

• **Replacing Critical Materials**—Apparently convinced that about everything from clothes to caskets can be made from their time- and pest-resisting product, the redwood people have turned to all industry as their new market. And, in a hitherto unsuspected number of instances, they have proved that critical materials can be replaced.

Although such unusual uses as Fiber A for textiles (BW—Jan. 17 '42, p. 55) have been promoted within the industry, much of the new business marks a turning back to the practices of earlier times when wood was far more plentiful than steel or concrete. For instance, to save cement and reinforcing steel, contracts for 16 miles of wooden sidewalk, remi-

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niscent of Gold Rush days, were let recently in the modern steel shipbuilding center at Vallejo, Calif.

● **For Storage Tanks**—Earnestly promoted by the California lumbermen is the increased use of redwood for water, oil, and chemical storage tanks in place of metal and reinforcing steel. In many new chemical plants and in the mid-continental oil fields the California lumbermen already have been successful in introducing redwood tanks.

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The return of redwood pipes and conduits to replace copper and iron has been noted in a surprising degree. Pipes of redwood staves, wrapped in wire and coated with asphalt, in sizes from 2 to 24 inches are being sold. Continuous stave conduits, assembled on the job up to 15 ft. in diameter, require a relatively insignificant amount of metal for the steel tie bands. On airfield roads, redwood is replacing sheet metal in the construction of culverts, which must be capable of withstanding the full load of a bomber (7½ tons per square foot on the top side of the culvert).

● **Wires Laid in Wood**—Railroads are returning to the old custom of trunking and capping. Due to the shortage of rubber-insulated cables for block signals, wires are laid in covered wooden trenches cut out of 4x6-in. redwood logs.

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In California, as elsewhere, grain storage is a problem. During normal years, 60,000,000 sacks are required for the grain harvest, but this year, due to hemp shortages, it is doubtful that 20,000,000 sacks will be available. The redwood people are selling material for numerous 2,000-bushel cribs of a new laminated construction nailed together out of random lengths without the use of any steel ties or rods.

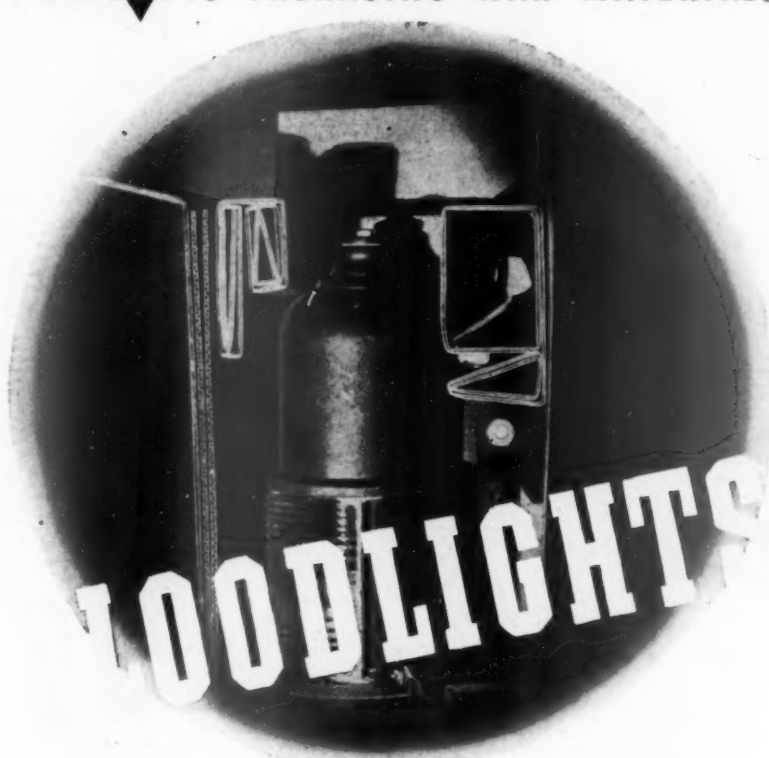
● **Barn Expansion**—War demands upon California's dairy industry started a barn expansion program until sheet metal priorities halted construction. Now plans are afoot to promote use of redwood for superstructures. In building and factory construction, redwood is finding new ways to replace metal. Detail designs have been mailed to architects throughout the country for the construction of rain gutters and downspouts out of stock sizes of redwood and for the elimination of metal flashing in roof valleys.

Many innovations discovered by consumers are increasing the use of redwood. Farmers in particular have been ingenious in replacing equipment with wood. One California rice grower, for instance, unable to repair a mechanical dryer, built a structure with compartments, each the size of a sack of rice. Redwood conduits underneath carry hot air to each compartment.

Around airports and defense plants redwood posts are in demand, particularly for electrically charged barriers.

● **Caskets, Ice Boxes**—Many former metal furniture manufacturers are turn-

HOW **H & D** IS PACKAGING WAR MATERIALS



MUST BE PROTECTED

HERE'S an example where "business as

usual" fits the needs of war. Studying the product, determining where it will need shock-absorbing protection, anticipating damage before it occurs and then beating it to the punch, is all in a day's work for H & D Package Engineers.

Emphasis upon "shipping boxes that protect" characterizes present production at H & D factories, where capacity work-schedules are being followed to meet the demands for millions of corrugated boxes essential to all-out war effort. However, the normal need for "packages that promote" has not been forgotten; the H & D Package Laboratory is also working to develop new styles of sales-stimulating packages to help you prepare for tomorrow's competitive markets.

Whether your packaging program is one of protection or promotion, you'll be days and dollars ahead to discuss your problems with an H & D Package Engineer. Write today, no obligation.



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How Tom Jensen Saved the Army a Lot of VALUABLE TIME

Along with planes, tanks and guns, the army needs ammunition chests. Making them involved an operation which, besides consuming too much time, demanded a turret lathe—and you know how scarce they have been. Deliveries were painfully slow.

Tom Jensen works in the factory that had the job. He's not a production engineer, but he got an idea about those chests. Because his employer maintains a Morton Suggestion System, Tom was sure of fair treatment and found it easy to submit his suggestion to responsible officials. Result, the bottle neck broken: punch presses do the work, the lathes are free for other tasks, and the army is getting ammunition chests twice as fast as before.

Maybe your workers could suggest ways to step up your production. A Morton Suggestion System provides the means for gathering good ideas. More than that, it actually stimulates employee thinking. Over 9,000 firms have used Morton Systems with profit—their savings total many millions of dollars.

Today, with efficient operation at an extra premium, with lives as well as dollars at stake, you need the ideas, the morale-lift, a Morton System can bring to your plant. It costs nothing to ask for details. Ask for them—today.

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ing back to veneer and are buying large quantities of redwood corestock. Metal caskets are out for the duration and casket manufacturers are making heavy demands for the slow-decaying redwood. With metal refrigerator production to stop Apr. 30 (BW—Feb. 21 '42, p14), manufacturers are planning enameled redwood ice refrigerators. With several manufacturers, redwood is replacing tin for containers. In packaging, it is already replacing tin, cardboard, and aluminum foil.

How well redwood succeeds in holding onto these new markets when the materials it is now replacing again become available depends, of course, not only on its adequacy as a substitute but also on post-war cost factors.

P.A.—a Big Man

Purchasing agents become more important than ever, and harder to find, as a result of war demands upon industry.

Even excluding government purchases and (more lately) war-stimulated buying, the dollar value of industrial purchases comes to hundreds of billions annually. Now, with war heaping an uncounted number of billions on top of the normal figure, a shortage of well-trained purchasing agents is becoming more and more acute.

• **Important Cog**—The war years of 1917-18 reared the industrial purchasing agent from a relatively insignificant employee to an important cog in the marketing process. This war is sure to make him twice as important, because mechanized battles really begin with the procurement of materials.

Three sources which employers will be quick to investigate when looking for new purchasing personnel are (1) their own engineering departments, (2) sales departments, and (3) colleges. Some 70 universities currently have instruction in purchasing (as part of the curriculum of the school of commerce). Although these courses lean heavily toward general business training and don't turn out a ready-to-use product, the graduates at least have a pretty good inkling of what the task is about.

• **Good Material**—Engineers make good candidates because industrial equipment and supplies are largely acquired on the basis of specifications, a subject in which engineers are specialists. Salesmen rarely are qualified on the basis of their technical knowledge, but they make grade-A material for a subsidiary division of the purchasing department—the expediting department.

In normal times this subsidiary, which concerns itself with delivery reminders, etc., isn't much more than a glorified



LIGHTS OUT

Only survivors of Manhattan's street lights of the horse and buggy era, two ancient gas lights in McDougal Alley, were recent victims of the blackout era. Lacking remote turn-off controls, they will be doused for the duration.

filing and stenography department. But since the advent of the war economy, expediting has become as important as purchasing. Anyone who can weasel an extra pound of metal or get delivery a day earlier is a hero. And because salesmen are masters of persuasion, a considerable number are being converted into expeditors. Not infrequently manufacturers immediately ship them to the supplier's factory so that the salesman can do his expediting where it counts most.

• **Supplying Helpful Data**—With so much green material coming into the purchasing fraternity, and with everybody, new and old, racking his brain over endless new regulations, the National Assn. of Purchasing Agents is redoubling efforts to send its 6,300 members helpful data as fast as possible. In this endeavor Washington has been most cooperative. Well-informed purchasing agents make life easier for government officials, and take some of the stress off the groaning armaments machine.

At that, however, many a manufacturer will be caught short-handed, and for lack of seasoned, ingenious personnel will find himself hopelessly short of supplies. Hence, employers solicitously watch over their key men lest competitors steal them away, and salaries are mounting to new highs. It's not unusual now for cost-plus government contracts to include an administrative charge covering the services of a purchasing agent. The government, in turn, has granted such allowances, usually in the sum of \$600 per month.

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You don't mind "shelling out" for something when you feel you're getting your money's worth. And when peace of mind is thrown into the bargain... why, boy, you pay with a smile!

Contentment is what your local insurance agent, or your broker, really has for sale. Not just a policy made of paper; not alone protection backed by the sound practices of capital stock company insurance.

To be adequately equipped with Standard Protection is more than a precautionary measure... it's a long step toward your peace of mind.

Did you know? Because of the organized fire-prevention activities of the capital stock insurance companies, your life and property are safer; and the cost of your insurance is much, much lower.

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Business Week • March 14, 1942

"Sailor, here's a line
that won't
let you down"



Yes, that Plymouth Rope is strong, dependable—and vital to victory. Rope, like other materials needed to fight this war, must be conserved. Here's how your executive action can help.

OUR COUNTRY'S need for rope increases every day. And war in the Pacific has stopped the shipment of Manila fiber from which Plymouth Manila Rope is made. Obviously there's no rope to waste.

THE NEED for conserving rope—and the simple rules that will make it last longer—must be made known to all who handle rope.

TO HELP FURTHER the Rope Conservation program, Plymouth Cordage Company has prepared a booklet,

"MAKING ROPE LAST LONGER." It tells how to overcome common causes of rope wear.

THIS ROPE conservation booklet is free to executives—or to others who can put it to good use. Simply fill out the coupon.

PLYMOUTH WARTIME ROPE

Plymouth Ship Brand Manila Rope (and all existing stocks of Manila fiber) has been diverted to war activities of key importance.

To fill civilian needs, Plymouth technicians have developed Plymouth Wartime Rope in accordance with fiber limits specified by the U. S. Government. This Wartime Rope—backed by the skill of the world's largest manufacturer of cordage—is most serviceable indeed.

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Please send me a copy of your new free booklet "Making Rope Last Longer."

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Overall Jackpot

Makers of jeans and other work clothes, especially those for women, cash in on rising factory employment.

While priority-panicked consumers were stocking up on automobiles, refrigerators, and radios a few months ago, the clothing industry drifted along in the doldrums. Now, with textile shortages impending and with durable-goods lines offering little or no outlet for purchasing power, clothing manufacturers—particularly those in the men's and women's coat and suit trade—are having their innings (BW—Jan. 31 '42, p. 27).

Probably the most fortunate segment of the clothing industry, aside from manufacturers assured of Army and Navy uniform orders, is companies specializing in work clothes. When an advisory committee of work clothing manufacturers was set up in the War Production Board a few weeks ago, WPB, in an official release, characterized the industry as "essential for the war program." Since Dec. 7, Washington has stamped few civilian goods industries with this cachet.

● **Licking the Cream**—Unlike the rest of the clothing trade, manufacturers of jeans and overalls have been licking the cream off the war boom for the past 18 months or more. It is a reasonably safe statement that virtually all the 600-odd companies in the industry now are producing well above 1937, and, in most cases, above pre-depression levels.

Government estimates of total employment on the war program indicate plainly enough that the work-clothing boom is still in its infancy. One of the oldtimers in the business—a conservative, expansion-shy firm—reports that, currently, its sales are running double what they were at this time last year. Sears, Roebuck's sales of men's work clothing in the Philadelphia mail order territory for a recent week were 170% above the comparable week in 1941.

● **Pay Dirt**—The real Mother Lode, however, is in women's work clothing. The boom here is a development of the past six months and it is rapidly turning into a stampede on the part of practically everybody in the clothing business.

Up to a few months ago, large-scale production of anything that could honestly be called women's work clothing—as differentiated from sports slacks, playsuits, and dressy overalls designed for a bit of rosebush pruning—was almost nil. Levi Strauss & Co. of San Francisco with its "Lady Levis" overalls for women, was one of the few manufacturers providing women's work

clothes that could really take it on the farm or assembly lines.

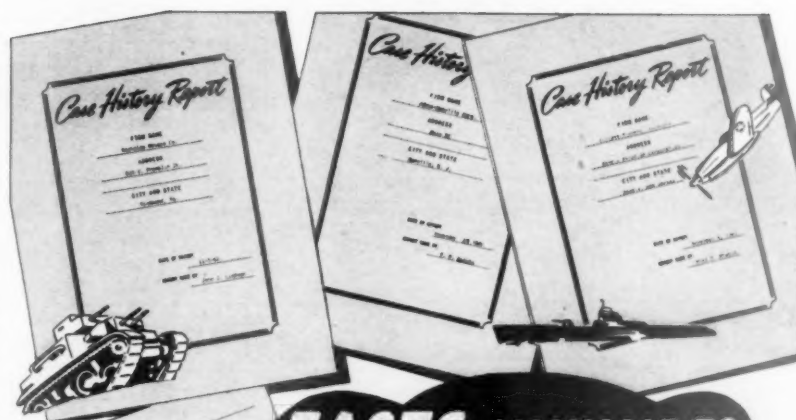
• **Functional Designs**—Last summer, the Bureau of Home Economics in the U.S. Department of Agriculture designed a line of strictly functional work clothes for women (BW—Aug. 2 '41, p. 34). The Sanforized division of Cluett, Peabody made up samples of the bureau's designs, held a general trade showing in November, and began advertising. Cluett, Peabody reports that over 55 manufacturers now are turning out Sanforized work clothing for women—adaptations of the B.H.E. garments or original designs. The Home Demonstration Service of the University of California's Agricultural Extension Department has followed the B.H.E.'s cue by designing a line of work clothes for women on the farm and in food plants. The designs were first shown Jan. 26 and are now being copied by West Coast manufacturers.

Manufacturers of women's dresses and sportswear were first to see the possibilities of feminine work clothing. California sportswear houses and midwestern housedress manufacturers who couldn't tell an overall from a pair of jeans six months ago are now going great guns.

• **In the Swing**—Established makers of men's work clothes generally have been leery of climbing onto the bandwagon, figuring that the lighter materials, different measurements, and styling required for women's garments would be a nuisance. Now, however, they are yielding to the tide. Some big houses though refusing retail business are accepting volume orders from individual manufacturers—aircraft, chemical, and munitions makers, for example—who have been aghast at combinations of slacks, satin blouses, and high-heeled pumps on their assembly lines and who have their own ideas of what the well-dressed gal ought to wear for a bit of spot welding.

Sales figures show that all this manufacturing activity is in response to real demand. Sears, Roebuck's 1941 fall-winter catalog showed a 600% increase over the 1940 fall book in sales of women's work clothes. Montgomery Ward showed a 100% increase in the department in its 1941 spring book, a smaller increase last fall. Department and specialty stores all over the country are giving women's work clothes a big play.

• **Shortages Pinch**—Life is not all beer and skittles in the work-clothing business however. Despite the industry's high rating in Washington, materials shortages pop up everywhere. As one man put it, "We don't know where the hole will come next." The average civilian consumes annually, in one form or another, about 25 lb. of cotton per year. The average soldier takes 250—and he takes, particularly, the ducks,



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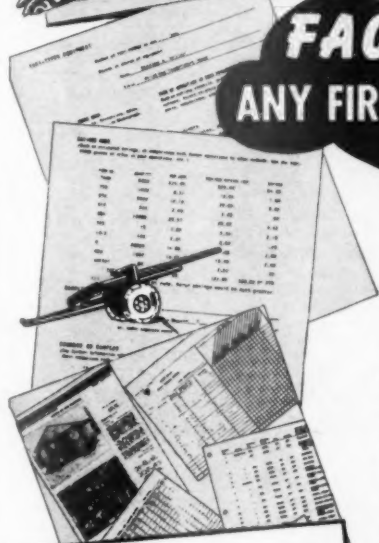
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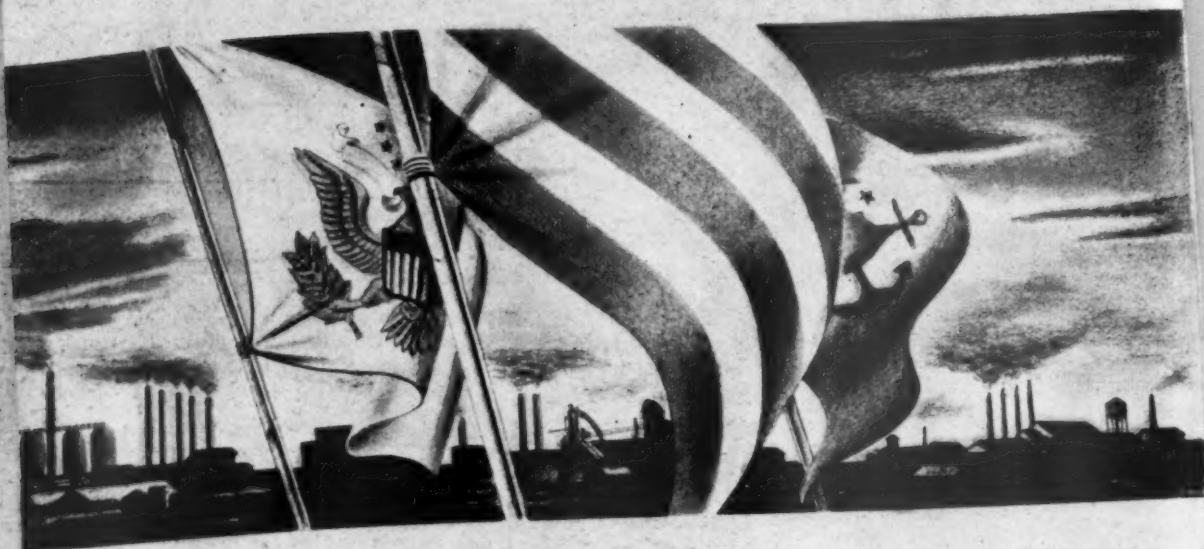
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"We are going to win the war, and we are
going to win the peace that follows."

FRANKLIN DELANO ROOSEVELT



TOWARD V-DAY

Certainly, it is the clear duty of industry to organize all available manpower, materials, and facilities to increase war production to whatever levels are required for victory.

But the purpose of war is peace.

This lays upon industry yet another obligation.

V-Day must bring Opportunity. When the men on the fighting front and the producing front return, they must have jobs.

Now is the time to create the sources of those jobs.

The timbers out of which future employment can be built are at hand. The materials for investigation are infinite, and our knowledge of them is being sharpened daily by the special needs of war.

Needed only is the will to use those timbers—within the limits necessarily imposed by total war efforts—to create new products, to devise new ways of doing old things, and to reduce costs to make products buyable.

This is a clear call for a new kind of exploration, in which every industry re-examines and re-assesses the resources of other industries.

It is also a clear call for cooperation. It calls for all Americans—labor, and Government, and management—to work together in the common hope for the future, as well as in the common determination for victory.

For there is a peace to be won, as well as a war.



CHEMICAL MATERIALS FOR INDUSTRY

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A Practical Program of Teamwork

TOWARD V-DAY

Every resource that Hercules Powder Company can bring to bear is working to win the war.

But while we are doing our utmost to produce battle materials for our armed forces, we know that America must also "win the peace that follows." To bring this double victory calls for more intensive teamwork now than ever before.

THE high purpose of research, today, is to *help win the war*—and then to keep America ahead.

Our own products and their uses are founded on research. Many of our most fruitful research findings have come from teaming with other inquiring minds on specific problems.

CAN YOUR RESEARCH HELP US?

We at Hercules are eager to learn of any new material, process, or equipment you have evolved, which can help us to speed victory, or enable us to create more employment after V-Day. Have you discovered something which will improve one of our chemicals, or help us to develop a new and better one, or to cut costs?

If so, write to us about it, so that we can explore the possibilities with you.

It is out of such cooperation that you and

we, both, can speed the defeat of our enemies—and keep America a land of Opportunity.

PERHAPS WE CAN HELP YOU

In our sectors of chemistry, war-intensified research has not only brought new developments in explosives, but has improved many of our materials, and produced *new* ones. Some of these make possible better plastics, and better protective coatings in wide variety.

Accomplishments in cellulose derivatives, in rosin and resins, in terpene chemicals, and in synthetics, improve processes and products for many essential war industries. These may help you to create new and more useful products, and to lower costs.

Many of these Hercules products are available to you now only for uses that will speed the winning of the war. Your *knowledge* of them today, and of what they can do, may help also in your planning for quick, job-making action on V-Day.

• • •

Tell us what your products are; we will send literature and information on Hercules materials which may aid you. After that, if you wish, a visit to the Hercules Experiment Station may be possible for further study. Write Department B-3, Hercules Powder Company, Wilmington, Delaware.

HERCULES
CHEMICAL MATERIALS FOR INDUSTRY

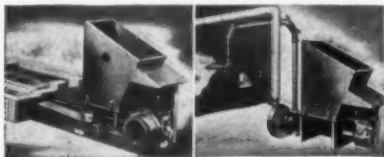




Feeding the Fires OF WAR PRODUCTION

"PLENTY—plenty quick," not "too little, too late!" That's the goal of America—and Iron Fireman stokers are helping industry attain it! In today's mechanized warfare, increasing fire-power on the battlefronts depends on increasing the fire-power in industrial boiler plants. In thousands of plants, Iron Fireman is stepping up steam output 25% to 40%. Enlist Iron Fireman to boost your wartime production. We shall be glad to make an engineering survey immediately of your boiler plant. Let's work together to win the war!

Iron Fireman Manufacturing Co., Portland, Oregon; Cleveland, Ohio; Toronto, Canada. For complete details write your name and address in the margin below, and mail to 3273 West 106th Street, Cleveland, Ohio.



Left: IRON FIREMAN POWERAM—The "standard" power stoker. Revolving worm carries coal to retort; reciprocating ram blocks insure even fuel distribution. Right: IRON FIREMAN PNEUMATIC SPREADER—Conveys stoker-size coal to the fire on a stream of air; high efficiencies from low-grade coals; for industrial boilers.

IRON FIREMAN

Automatic Coal Stokers



denims and other materials that the work clothing industry uses. Dyes—particularly overworked khaki and indigo are tight. The industry thinks it may soon be asked to get along without these two colors entirely.

"Hardware" for work clothing—rivets and buttons—is being drastically curtailed by priorities on metals. Slide fasteners already have been eliminated from work shirts, except for special models.

Most manufacturers have voluntarily cut their lines drastically to increase production. Sweet-Orr & Co., Inc., one of the biggest companies in the field, now carries less than 40% of the styles it sported a year ago. Sweet-Orr has cut out its sportswear business—mostly slack and shirt combinations—entirely.

• **No Big Profits**—Manufacturers say they aren't making any fancy profits out of the war program. Margins are particularly slim they moan, confidentially, on government contracts of which they handle plenty. One big company estimates that 60% of its production is now on war work, directly or indirectly. The industry expects that price ceilings shortly will be added to its other troubles.

Meat on the Table

Livestock supplies near record level, and slaughter is sure to hit a new high this fall unless bottlenecks develop.

Outstanding fact in the meat packing industry is that the supply of livestock available for slaughter is approaching new highs (BW—Feb. 28 '42, p73). Spurred by the favorable corn-hog price ratio and by the exhortations of government spokesmen, hog raisers will by next fall be ready to market the largest crop of hogs ever to reach U. S. stockyards. Since a sow can farrow six to eight pigs twice a year, hog breeding responds to this stimulus most rapidly of all the livestock industries.

• **Element of Luck**—The beef cattle population is also rising to levels higher than any since the early Twenties, and sheep to the highest level of all time. This is more by luck than by foresight, since these animals propagate much more slowly than hogs.

It takes about three years from the time a cow is bred until her calf is ready for market as young beef. A yield of 100% in lambs—that is, one lamb per ewe per year—is about the best a sheep breeder can expect. But because of the acreage restrictions and soil conservation programs, farmers began back in the mid-Thirties to put more of their land into grass and soil-replenishing crops such as clover and lespediza, then



EMERGENCY LIGHT

Packaged in a double candlestick holder, Standard Oil's (Ind.) Blackout Candles will burn 9 hours each.

ran cattle or sheep on these fields. This has been going on long enough so that the effect is being felt in flocks and herds just when it is most needed.

• **Can Slaughter Be Handled?**—Pointing to small packing plants which have been closed, lost by fire, or otherwise withdrawn from production since the Twenties, stockmen estimate that total U. S. packing capacity has shrunk 10% to 15% meanwhile. They express misgivings about the packers being able to handle the flood of hogs expected in stockyard pens next fall, and fear transportation agencies may be swamped.

Packers pooh-pooh this uneasiness, say they have traditionally been able to handle all offerings in a 40-hour week and that they can expand their operations up to as much as 22 hours a day, thus almost tripling their output if necessary. Industry spokesmen claim their surveys of the situation show it will be no trick to handle the load, and the railroads insist they can sandwich in any livestock traffic that is likely to develop.

• **Prices Keep Rising**—Packers and stockmen both expect that Washington will presently impose price ceilings on pork, perhaps upon other meat. Actually, without official action, buying for lend-lease has been restricted in recent weeks to hold prices at what the buyers consider reasonable levels. Less was bought in the last two weeks of February than

True Stories of Wartime Business



1 THE FOREMAN WHO COULDN'T TELL TIME... The clock doesn't say whether it's noon or midnight—and neither does the light—since one California machine tool plant installed fluorescent “daylight.” Night inspectors are able to turn out as much work as men on the day shift, with less eyestrain!



2 THE DISAPPEARING HEADACHES... “30% less call for headache tablets,” says one plant, “since our new fluorescent lighting was put in. *Far less loss of time* due to headaches and eyestrain!” You see *faster*, more easily, under modern, efficient lighting!

with a Moral for you !

3 THE HAPPY PURCHASING AGENT...

This is you when you see the variety of fluorescent lighting fixtures! G-E cooperates with experienced fixture manufacturers who build over 100 tested, certified, guaranteed fixtures to MAZDA lamp makers' specifications. Look for Fleur-O-Lier label (or RLM) at G-E lamp distributors.



4 THE ACCIDENT THAT DIDN'T HAPPEN... “50% fewer accidents since we installed modern lighting,” says an Indiana machine shop. “Less eyestrain—less time off for sickness,” says a manufacturer of stampings. You can speed production just as easily!



5 THE INVISIBLE HELPERS... It's like having extra people on the job when you have the aid of sight-saving light. An office says, “It stepped up our accounting capacity 20%, eliminating need for extra operators, floor space, or machines. Fewer errors occur and they are discovered sooner!”



6 IF YOU WANT TO SPEED UP YOUR BUSINESS to help win the war, check your lighting! G-E engineers will be glad to help. Investigate G-E MAZDA F fluorescent lamps... the lamps that give “indoor daylight” for a minimum of current. Ask your G-E lamp supplier, or write General Electric, Nela Park, Cleveland, Ohio.

G-E MAZDA LAMPS
GENERAL ELECTRIC

(Moral: Ask G-E how Light can help)

OIL

turns a billion wheels that
MUST NOT STOP!

AMERICAN oil well operators are keenly aware of the importance of petroleum in war production. They are working to meet an ever-increasing demand for oil despite acute shortages of operating supplies.

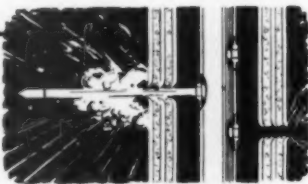
In 1932 Lane-Wells pioneered the Gun Perforator and made possible better, more efficient completion and production methods which reduced steel supply requirements. Immense reserves of previously unrecoverable oil can now be tapped without the extensive use of materials urgently needed to build ships and tanks and planes.

For nearly ten years the Lane-Wells organization has worked with oil well operators to increase well production and de-

crease production costs. Our engineers know intimately the operating conditions and problems of the producing oil fields. Thirty-four Branches are staffed around the clock by carefully trained, experienced field men.

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Rocky S. Burke
PRESIDENT



3,100 American Oil Companies know that Lane-Wells Gun Perforator enables them to control wells to meet almost any eventuality. Lane-Wells experience covers 40,000 successful Gun Perforator jobs.

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in any fortnight of the preceding several months, but this had no appreciable price-retarding effect because the hog market consistently edged higher.

Stockmen suspect that the packers might welcome a ruling by OPA to restrict meat prices, since this would automatically reflect itself in prices that livestock would bring. Packers are officially mum, unofficially say they have been moving heaven and earth to convince Washington that putting a ceiling on meat would be far less simple than regulating prices of more easily standardized goods.

• **Dodges Are Many**—The packer's net profit is around 4¢ per lb., the retail meat dealer averages no better than 1¢ per lb. Consequently, even an imperceptible bit of finagling could double both of these profits. Such practically undetectable devices as trimming cuts to carry a trifle more fat, or giving borderline grades the invariable benefit of the doubt, are well known to the trade, they say, and would have to be guarded against by unremitting police work to make official regulation effective.

That farmers do not believe they will be harmed by price ceilings is indicated by the fact that there were no abnormal runs of hogs to market during the talk of an impending OPA crackdown. In an editorial last week, the Corn Belt Farm Dailies, spokesman for middle-western livestock growers, flatly stated that Congress dare not permit governmental attempts to control meat prices without also controlling wages, lest the farmer rebel in an unmistakable voice that would bring a crop of new faces to Capitol Hill next November. The editorial pointed out, "Surely, a workingman drawing \$1 to \$1.50 an hour can afford to pay 35¢ per lb. for his ham and bacon, and he doesn't have to pay that now."

Indication of the bulge in livestock activity is last week's reported shipment of 400,000 bu. of wheat to the East for livestock feeding, at a price approximately equal to the market price of corn. This is part of 100,000,000 bu. of government-loan wheat made available in January for livestock feeding.

• **Replacing Corn**—Wheat is worth a trifle more than corn as stock feed, and this particular shipment is moving into a territory which normally imports corn for this purpose from the Middle West. Under the official regulations, this wheat must be cracked to make it unsuitable for milling, or else the buyer must give bond to guarantee its use to make animal feed. Stockmen have no incontrovertible knowledge of why the Commodity Credit Corp. is making this use of loan wheat. But they theorize that either the government is eager to vacate western elevator space for the new winter-wheat crop (now only three months distant) or else is selling the grain as a brake on mill-feed prices.

THE WAR— AND BUSINESS ABROAD

Red Ink in Pacific

Extent of loss faced by American investors as result of Japanese seizures in Far East begins to attract attention.

In the excitement that followed the Japanese attack on Pearl Harbor and the formal entry of the United States into the war, the public lost sight of the fact that American investors faced the possible loss of their \$500,000,000 stake in businesses scattered through the Far East from Peking to Melbourne. But by the time Japanese troops entered Singapore, and when American oil companies—before evacuating Sumatra—blew up a three-year-old \$100,000,000 aviation gasoline refinery, worried investors began a checkup of long-profitable holdings that might yet fall to the invaders.

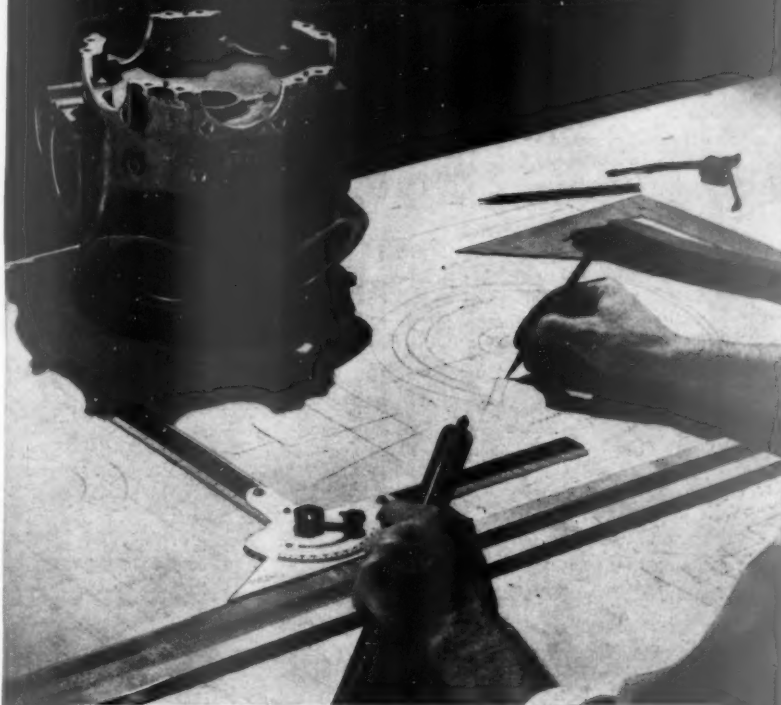
• **In the Philippines**—Biggest American stake in the Orient when Washington took its last inventory was in the Philippines, where 60 American companies had invested more than \$92,000,000 in businesses ranging from sugar and palm oil plantations to the gas and electric utility plants in teeming Manila.

Only a little less—\$90,000,000—was invested in China, most of it in Shanghai or Tientsin. Oil for the lamps of China was distributed from the seaboard to remote villages in the interior in one of the most elaborate distribution organizations in the Far East. The same customers were big buyers of cigars from the far-flung British-American Tobacco Company's distributing organization.

• **Shanghai Landmarks**—In Shanghai, the National City Bank (International Banking Corp.) and Chase National Bank have long been landmarks along the Bund, and the American Express is as well known to the Chinese for its freight-forwarding business as its travel trade. Shanghai's telephone system is operated by International Telephone & Telegraph, and American & Foreign Power provides the city's electricity.

Australia has proved only a little less popular than China as a field for American investors, with everyone from automobile manufacturers (General Motors and Ford assembly plants) to chewing gum producers (Wrigley) angling for a share in this profitable English-speaking market. Office-equipment manufacturers, movie distributors, oil and tire companies, and farm-machinery producers have set themselves up in the country

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has his eye on the machine



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Copper & Brass Research Assn.
White Rock Mineral Springs Co.
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Beech-Nut Packing Company
Hartford Fire Insurance Company
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International Silver Company
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either to save freight by assembling locally or to hurdle tariff barriers.

• **Petroleum Investments**—Total United States investments of \$70,000,000 in the Netherlands East Indies are outdated by recent heavy increases by the

oil companies. Exact amounts invested in the two new high-octane gasoline refineries in the last few years as a part of the program to strengthen the supply bases of the countries now fighting together as the United Nations

Corporate Stake in Far East—\$466,929,000*

Nearly 200 American companies with a Far Eastern investment stake of \$250,000,000 have watched their properties fall into the hands of the Japanese since Tokyo first set out to

build its "New Order." Now, with Burma in its grasp and Java besieged, Japan threatens to snatch the three remaining plums in the Orient—India, New Zealand, and Australia.

Direct Investments by Country and by Industrial Groups

(Value, Millions of Dollars)								
	Manufacturing		Distribution		Miscellaneous		Total	
	Number	Value	Number	Value	Number	Value	Number	Value
Japan	21	25,561	12	5,211	13	15,922	46	46,694
China	23	7,164	25	7,190	19	76,239	67	90,593
Indo-China and Thailand	—	—	(1)	(1)	8	3,286	8	3,286
British Malaya	(1)	(1)	6	1,506	11	22,234	17	23,740
Philippine Islands ..	17	9,220	18	7,511	25	75,419	60	92,150
Netherlands East Indies	(1)	(1)	5	636	21	69,123	26	69,759
India and Burma ..	4	9,188	17	6,844	11	13,648	32	29,680
Australia	58	38,699	20	8,260	16	42,069	94	89,028
New Zealand	7	3,653	8	3,808	6	14,538	21	21,999
Total	130(2)	93,485(2)	111(3)	40,966(3)	130(4)	332,478(4)	371	466,929

* Latest data available—1936

(1) Included in Miscellaneous. (2) Excluding Netherlands Indies & Malaya. (3) Excluding Indo-China & Thai. (4) Including Mfg. & Dist. companies in footnotes (2) and (3).

By Major Corporations—Country by Country

JAPAN

Aluminium, Ltd.
American Express
Corn Products Refining
Ford
General Electric
Goodrich
International Tel. & Tel.
National Cash Register
National City Bank
Otis Elevator
Paraffine Companies
Republic Steel
Socony-Vacuum
Standard Oil (N. J.)
Tidewater Oil

CHINA

Aluminium, Ltd.
American Express
American & Foreign Power
American President Lines
British-American Tobacco
Chase National Bank
Colgate-Palmolive-Peet
Ford
General Electric
International Tel. & Tel.
National City Bank
Otis Elevator
Pan American Airways
Parke-Davis
Spencer Kellogg
Socony-Vacuum
Standard Oil (N. J.)
York Ice Machinery

FRENCH INDO-CHINA AND THAI

Socony-Vacuum
Standard Oil (N. J.)

PHILIPPINE ISLANDS

American President Lines
Associated Gas & Electric
Balatoc Mining Co.
California Packing
Colgate-Palmolive-Peet
Consolidated Electric & Gas
Firestone
General Electric
Goodrich
Goodyear
Hanson & Orth
International Harvester
Lever Bros.

Libby, McNeill & Libby
Manila Cordage Co.
National City Bank
Otis Elevator
Pacific Commercial Co.
Pan American Airways
Procter & Gamble
Socony-Vacuum
Spencer Kellogg
Standard Oil (Cal.)
Standard Oil (N. J.)
Texas Corp.
Tidewater Oil
J. G. White & Co.

MALAYA

Firestone
Ford
Goodrich
Goodyear
National City Bank
Pacific Tin Consolidated Corp.
U. S. Rubber

NETHERLANDS EAST INDIES

British-American Tobacco
Colgate-Palmolive-Peet
General Motors
Goodyear
Procter & Gamble
Socony-Vacuum
Standard Oil (Cal.)
Standard Oil (N. J.)
Texas Corp.
Union Carbide
U. S. Rubber

INDIA AND BURMA

Aluminium Ltd.
American Express
American & Foreign Power
British-American Tobacco
Colgate-Palmolive-Peet
Corn Products Refining
Firestone
Ford
General Electric
General Motors
Goodyear
Ludlow Jute
National City Bank
Remington Rand
Socony-Vacuum
Standard Oil (Cal.)

Standard Oil (N. J.)
Texas Corp.
Westinghouse Elec. & Mfg.

AUSTRALIA

American Tel. & Tel.
British-American Tobacco
Bristol Myers
Burroughs
J. I. Case
Colgate-Palmolive-Peet
Cudahy Packing
Eastman Kodak
Ford
General Electric
General Motors
Goodyear
International Harvester
Jantzen Knitting
Kelllogg
National Cash Register
National Dairy
Otis Elevator
Pan American Airways
Paraffine Companies
Paramount Pictures
Parke-Davis
Socony-Vacuum
Standard Oil (Cal.)
Standard Oil (N. J.)
Stromberg-Carlson
20th Century Fox
Texas Corp.
Wrigley

NEW ZEALAND

Aluminium, Ltd.
American Home Products
American Smelting & Refining
Black & Decker
British-American Tobacco
J. I. Case
Colgate-Palmolive-Peet
Cudahy Packing
General Motors
International Harvester
International Tel. & Tel.
National Cash Register
Otis Elevator
Pan American Airways
Socony-Vacuum
Standard Oil (Cal.)
Standard Oil (N. J.)
Swift International
Texas Corp.
Western Electric
Wilson
Wrigley



More care in avoiding accidents means more production here . . .

and more of everything needed here.



Carelessness and Victory don't mix!



Safe (?) at home

One-third of all fatal accidents—and no one knows *how many* less serious injuries—happen at home! Eliminate every possible hazard. Be especially careful in blackouts.



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America's Sales Stake in Ten Far Eastern Markets

What each country means to United States exporters of 15 key products

	Total U. S. Exports (In millions — 000,000 omitted)	% of Total Exports Shipped to:										
		Japan, Korea, Man- chukuo	China	French Indo- China	Thai	Philip- pine Islands	Malaya	Nether- lands East Indies	India & Burma	Aus- tralia	New Zealand	Total Far East
Automobiles & Parts.....	\$270	3.76%	3.74%	0.16%	0.06%	1.81%	0.15%	0.79%	1.90%	3.98%	1.09%	17.44%
Aircraft & Parts.....	68	16.21	11.15	*	1.24	0.68	0.01	12.45	0.12	1.82	0.24	43.92
Machine Tools.....	102	23.43	1.02	0.02	0.02	0.21	0.03	0.14	1.23	1.78	0.12	28.00
Industrial Machinery (except machine tools).....	168	1.48	1.61	0.02	0.13	3.40	1.18	2.79	1.61	2.32	1.34	15.89
Electrical Machinery, including Radios.....	102	0.92	2.04	0.16	0.20	2.71	0.62	0.71	2.52	2.81	1.93	14.63
Agricultural Machinery.....	75	0.15	0.26	0.01	0.17	0.61	0.04	0.43	0.42	8.34	4.28	14.71
Office Machinery.....	29	0.42	0.51	0.11	0.20	1.55	0.53	1.08	1.97	2.86	0.96	10.20
Iron & Steel Scrap.....	45	48.27	0.64	.....	.....	0.03	.....	*	0.09	.....	.....	49.02
Iron & Steel (except scrap).....	183	8.73	4.79	0.11	0.09	5.53	0.82	1.02	1.29	2.37	0.46	25.20
Refined Copper.....	74	29.45	1.67	.....	0.03	0.18	.....	*	0.18	*	.....	31.52
Petroleum & Products.....	389	13.17	1.91	0.12	0.04	1.53	0.24	0.38	0.79	2.75	0.90	21.84
Chemicals & Related Products.....	129	4.45	2.52	0.02	0.12	4.75	0.52	1.69	2.93	2.30	0.54	19.82
Flour.....	23	0.02	6.22	*	0.01	14.94	0.01	0.02	*	*	*	21.21
Raw Cotton.....	224	23.56	1.61	0.56	.....	0.05	.....	.....	1.30	0.24	.....	27.33
Tobacco & Products.....	170	0.17	4.24	0.07	0.43	3.63	0.01	0.28	1.30	4.70	0.74	15.57
All U. S. Exports.....	\$3,057	7.81%	2.37%	0.10%	0.11%	2.82%	0.29%	0.90%	1.14%	2.25%	0.77%	18.55%

* Less than 0.005%.

Data: Bureau of Foreign & Domestic Commerce. Figures are for 1938, last full peacetime year.

were not revealed until the one at Palembang was destroyed as the Japanese began their invasion of Sumatra. Then oil officials admitted that it had cost, with auxiliary installations, nearly \$100,000,000.

Investments in Australia, New Zealand, and India still have not been damaged by the onrushing Japanese, but in all of the other countries—including Burma—Americans are preparing to write down or write off much of the \$275,000,000 that already has fallen into the hands of the Japanese.

Quinine Quest

Java's plight highlights dependence of world on Indies for this vital drug, but output of atabrine promises a remedy.

As the Japanese advance on the fabulous green island of Java, their industrial camp followers marks its cinchona plantations as important items in the anticipated booty. The 37,500 acres of trees furnish the bark from which the world gets its quinine. Until the warriors of the coprosperity sphere came along, the plantations were the nucleus of the Dutch government's quinine monopoly which controlled some 90% of world production.

• **How Much Is Needed?**—The United States government ranks quinine second only to opium in its list of critical drugs, a tribute to its importance in treating malaria and other ills. A federal stockpile of quinine has been accumulated. Its size is a secret but it is said to be sufficient for as much as two years (BW—Feb. 7'42, p56). Yet with military men

talking of a ten-year war, the quinine outlook still is uncertain.

There are two reassuring factors: Quinine supplies from tropical American sources can be increased, and production of atabrine (a synthetic substitute for quinine in the treatment of malaria) has been stepped up sufficiently to take care of any demand now foreseen.

• **Emigrant Industry**—Quinine's story is a small-scale version of what happen to rubber. It originated in South America, was smuggled out and transplanted in the East Indies, and cultivated production in the Orient gradually supplanted the harvest from wild trees of this hemisphere. The name which has come to designate the trees derives from the Countess of Chinchon, wife of the Spanish governor of Peru. In 1638 she was cured of a fever by an extract from the bark. Jesuit priests introduced cinchona into Europe, where it was first called "Jesuits' bark."

• **Scope of Monopoly**—The tree is slow-growing and has to be killed for removal of the bark. Patiently the Dutch developed their hold on the market. In 1938, the last peace year, all but 6,500 lb. of our 1,349,000 lb. of imports of cinchona bark came from the Netherlands East Indies. Similarly American imports of 1,468,500 oz. of quinine sulphate and other quinine salts came predominately from Dutch interests. Total values of U. S. purchases (bark, sulphate, other salts) for 1938 was \$1,383,117. If the Dutch run true to form they will destroy their cinchona trees rather than leave to the Japanese the benefits of their foresight.

The British have begun small cinchona plantations in Jamaica and the United States has done the same in Puerto Rico. Development of larger supplies of quinine from Latin America is

included in the Roosevelt Administration's plan for boosting noncompetitive products for good-neighbor commerce. But the immediate increase must be brought about by encouraging South American Indians to gather more cinchona bark from wild trees.

• **Possible Sources**—Bolivia sent 2,000,000 lb. of bark to Europe in 1938. Peru and Ecuador could also increase shipments to us. The United States requires between 4,000,000 and 5,000,000 oz. of quinine yearly.

The case of India illustrates the fact that since quinine comes from a tropical plant and is applicable to a tropical disease, regions that raise cinchona are also great markets. India produces 70,000 lb. of the bark annually but India's annual demand is for 1,000,000 lb.

Malaria ranks with yellow fever as a major scourge for which there is a specific cure. Systematic swallows of quinine or atabrine would save the 3,000,000 human beings killed annually by malaria. The U. S. Public Health Service estimated that, in 1934, there were nearly 5,000,000 people in our southern states suffering from the disease.

• **Problem for Army**—In southern Army maneuvers last year soldiers were regularly dosed with quinine and atabrine. The threat is of great concern to Army medicos because so many camps are in the South and much of our fighting promises to be in tropical areas where the tiny bayonets of the malaria-carrying mosquito can do more damage than enemy bullets.

Since 1932 German atabrine has fought Dutch quinine all around the world. The synthetic competitor of quinine in the malaria market is another of the derivatives of coal tar discovered by German chemists.

Winthrop Chemical Co., Inc., a

member of the Sterling Products family, some years ago acquired the manufacturing rights for atabrine in the American field. Atabrine is taken as a small tablet. It is yellow and it temporarily tints some patients' skin that color (due to its derivation from acridine, a yellow coal-tar dye).

• **Comparative Costs**—Atabrine works faster than quinine. One ton of atabrine will cure 600,000 cases of malaria, while a ton of quinine will cure 30,000. Quinine costs less per pound but it is claimed that the smaller dosage of atabrine makes it more economical to use.

There is no ceiling on quinine prices but they have advanced very little. In 1940 quinine sulphate sold for 67¢ per oz., last year it was 74¢, present price is around 75½¢. Doubtless it would have gone higher but for the government hold on the stockpile from which sales could be released to discourage skyrocket tendencies.

• **Atabrine Expansion**—Winthrop has radically cut prices for atabrine to the government, due to savings from greater production. The company isn't telling what current production is. A statement made by a Winthrop official in 1940 put the capacity of the atabrine plant in Rensselaer, N. Y., at one-half ton per month. This has been stepped up tremendously at the suggestion of the Army and the Public Health Service. It is said the current rate of production is 2,000% of normal prewar needs.

The company is about to duplicate the present capacity in an inland location which is safe from enemy bombing; much equipment already has been delivered. Expansion costs are being met by Winthrop. Should quinine run out entirely in two years, the company would still be producing enough atabrine for all needs as now estimated. As long as we have coal there'll be plenty of the raw material.

• **"Sulfa" Family**—Winthrop Chemical Company introduced into the U. S. the first "sulfa" drugs which have revolutionized the treatment of pneumonia, streptococcus, and other diseases. Its protosil and sulfanilamide were put on the American market in 1936.

Like atabrine, the sulfa chemicals were coal tar derivatives developed in the laboratories of Germany's dye trust, I. G. Farbenindustrie. Winthrop obtained American rights to the products back in the pre-Hitler era. Since the outbreak of war with the Axis, Winthrop Chemical and other Sterling Products units have been converted into a striking force against the German dye trust in Latin American markets.

• **Breaking Reich's Grip**—Last year the Department of Justice took action to abrogate certain long-term contracts between Sterling and I. G. Farbenindustrie. Object was to clear the company's decks for the drive against I.G.'s foreign markets. Basis of the suit was the charge

that, outside the United States, Sterling had an illegal profit-sharing arrangement with I.G.

Sterling accepted a consent decree and paid fines. By outlawing the contracts with I.G., the government freed Sterling for a direct drive against the German dye trust in Latin American markets. A vigorous sales and advertising campaign is now in progress there with the U. S. government backing Sterling's organization.

Thurman Arnold, head trust-buster of the Department of Justice, has this to say about the situation:

"German control of drug outlets in South America has been one of the most effective instruments of propaganda and German influence in this hemisphere. There is, therefore, an imperative necessity that American concerns build up their own outlets. Sterling Products . . . remains an efficient organization for the distribution of drugs. That organization . . . must receive every assistance in the long and expensive process of establishing American outlets for drugs in this hemisphere."

Standardization

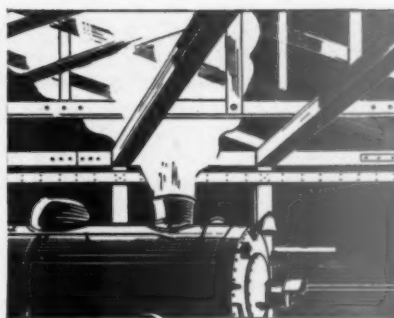
Canada moves, industry by industry, to regulate qualities and sizes, with eye on prices, conservation, and capacity.

OTTAWA—The green light is showing for standardization of consumer commodities, doubling up of civilian industries, and other production and price economies in Canada. War controllers, moving rapidly from industry to industry, say they are going to take in everything susceptible to standardization.

They moved in last week on canned goods and men's clothing. Packers now have their orders to can a limited variety of fruits and vegetables, sell them at prices fixed by Ottawa in containers of fixed sizes. Manufacturers of men's clothing and custom tailors are restricted to production of standardized suits and other items of apparel. The shoe industry is under pressure to organize its output down to a minimum of standardized styles, qualities, and colors.

• **Canners' Curb**—Around 250 canners are affected by the order which restricts packing in tins to a few vegetables and fruits—beans, corn, peas, tomatoes, pumpkin, squash, spinach, and fixed maximum quantities of mixed vegetables, Canadian asparagus, apricots, peaches, pears, plums, berries, cherries, fruit salad, jams, jellies. Other vegetables and fruits ordinarily packed in tin are expected to be preserved in the home or by dehydration processes.

All of the vegetables with the excep-



Service Records Like This Proved the Worth of Wood

AN ENGINE HOUSE is a trouble-maker for all building materials. Metals are attacked by corrosive stack gases. Ordinary wood soon succumbs to decay hastened by high humidities. Wolmanized Lumber* has proved to be a solution to these problems in roof trusses and decks, window sash and sills.

WOOD IS NATURALLY resistant to corrosion, so its use eliminates that worry. Wolmanizing the wood—vacuum-pressure impregnation with Wolman Salts* preservative—goes a step farther. It gives ordinary wood the ability to withstand decay and termite attack.

FOLLOW THE LEAD of the railroads. They have found in Wolmanized Lumber a means of lengthening the life of their wood structures and reducing maintenance costs. Its use introduces no unusual problems, because Wolmanized Lumber is handled like ordinary lumber. It does not increase the fire hazard.

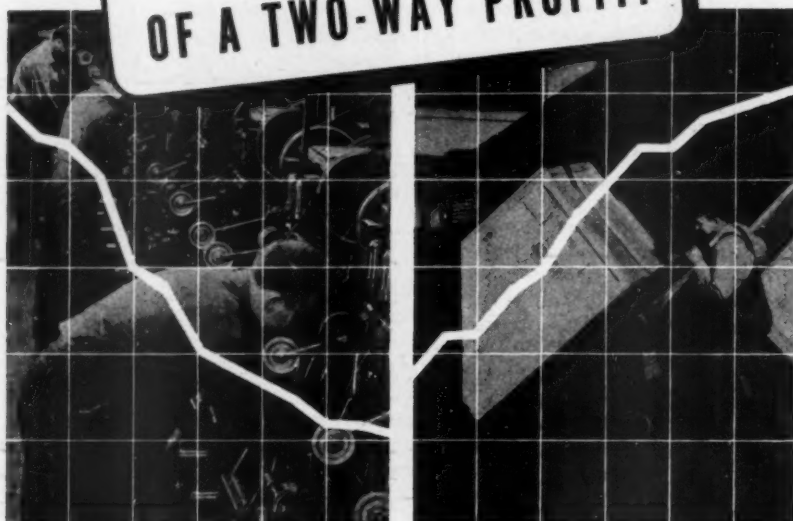
WOLMANIZED LUMBER gives you all of the usual advantages of wood construction; ease of handling and erection, lightness, strength, resilience and low cost. It is clean, odorless and paintable. "Fibre fixation" prevents washing-out or leaching of the preservative. American Lumber & Treating Company, 1656 McCormick Bldg., Chicago, Ill.

*Registered Trade Mark



GOOD BUSINESS NEWS

THE INSIDE STORY OF A TWO-WAY PROFIT!



JUNE AUG. OCT. DEC. FEB. APR.
DECREASED production costs

JUNE AUG. OCT. DEC. FEB. APR.
INCREASED sales

IN THE fiscal year ending MAY 31st, 1940, the COSMOS CO.* did a business of \$3,210,671 and wound up \$95,214 in the red.

Without knowing the inside story, you might shrug this off as a case of bad management.

The facts prove otherwise. They show that this well-operated company, producing a quality product, in good demand, was seriously handicapped because its banking connection lacked vision and imposed many restrictions upon the manufacturer. Inability to supplement working capital with accommodations as needs required, resulted in production peaks and valleys that made unit costs excessive.

On June 1st, 1940 the company began to finance through Commercial Credit by cashing their receivables and obtaining advances against inventory located in their premises. From that day the story was different.

With an ample amount of working capital instantly available, production went on a regular schedule, and unit costs dropped. In five months, without any increase in sales volume, there was a profit of \$59,465.

As the year went on, the improved financial position permitted an expansion of sales, bringing additional profits in higher ratio. Comparison shows:

AS OF	SALES	NET PROFIT
5-31-41 (12 mos.)	\$3,907,080	\$128,579
11-30-41 (6 mos.)	2,464,509	98,110

Over the year-and-a-half period net worth increased from \$719,647 to \$957,745, and without any additional capital investment.

* * * *

This is no exceptional example. Commercial Credit's OPEN ACCOUNT and INVENTORY Financing Plans stretch capital dollars beyond the limits of any routine financing. Thousands of concerns have used it . . . with amazing results. Why not get facts and figures to show what it could do for your company. Write for a copy of the new booklet—"THE TREASURER'S DILEMMA". Address Dept. -1202.

*A fictitious name, but the facts and figures, taken from our files, can be verified.

COMMERCIAL CREDIT COMPANY

"Non-Notification" Open Account Financing

BALTIMORE

BOSTON NEW YORK CHICAGO SAN FRANCISCO LOS ANGELES PORTLAND, ORE.

CAPITAL AND SURPLUS MORE THAN \$60,000,000

tion of asparagus must be packed only in 20-oz. and 105-oz. sizes. Asparagus is allowed the addition of a 12-oz. can. Tomato juice may be packed in cans for 20, 28, 48, or 105 oz. Berries and cherries are limited to 20-oz. and 105-oz. sizes, a 28-oz. size being allowed for other fruits. Jams and jellies may not be packed in cans smaller than the 4-lb. but may be put up in 30-lb. and 32-lb. sizes. The fruits and vegetables which may be packed in tin were selected by a combination of Ottawa war controllers in consultation with the packers themselves, selection being governed by (1) nutritional value, (2) consumer demand as represented by normal pack and sales, and (3) impracticability of other preserving processes.

• **Excluded**—Baked beans, pork and beans, spaghetti, macaroni and vermicelli are specifically banned from packing in tin.

After June 30, ready-to-serve soup may not be packed in tin and from now until that date canners are restricted to 50% of the quantity of tinplate used for the purpose in the corresponding period in 1941. A canner who wishes to convert to condensed soup may obtain 75% of the tinplate used in packing ready-to-serve soup during the last half of 1941.

Expressly forbidden is the use of tin containers for packing imported fruit or vegetables.

• **Price Ceiling Clamps**—Regional prices have been fixed by Donald Gordon's price administration on 1942 tomatoes, tomato juice, peas, corn and green and waxed beans. To protect farmers' prices against the ceiling profit squeeze, and thereby maintain or expand production, canners are given a special inducement to increase prices on these vegetables over those paid in 1941. If they pay advances on entire crops not less than amounts stipulated by the Gordon board, they will be allowed to sell to the government-owned Commodity Prices Stabilization Corp. such part of their pack as remains on their hands after Feb. 1, 1943, at prices fixed by the board, these being an average of 10¢ a dozen lower than prices fixed for sale to the trade.

In such sales to the corporation canners must store and insure the goods at their own expense until May 31, 1943, after which they will be indemnified at the rate of 1¢ a month on each case of 24 containers.

• **Baskets and Crates**—An additional prop for the price ceiling is an order fixing prices on baskets, crates and other packages for fruits and vegetables and standardizing them. Manufacturers of such packages are barred from decorating them with brands or trademarks. Price-fixing is the closest approach so far to unification of qualities in canned goods subject to restrictions. In order to enjoy the privilege of selling to the

corporation, canners must meet the requirements of the Meat and Canned Food Act. Standard, choice, and fancy grades are still permitted.

Purposes of the standardization program are: (1) to conserve scarce materials; (2) to release production capacity and labor for the war effort; (3) to maintain the price ceiling. The fact that the Gordon board has a lot to do with framing all the orders indicates that the price ceiling is a prime consideration.

• **Subsidy System**—The extent to which Ottawa is prepared to go to maintain the ceiling is indicated by a board decision, now awaiting Finance Minister Ilsley's O.K., to extend the subsidy system to all domestic consumer commodities. When subsidies were resorted to as a means of keeping prices under the roof, it was intended to use them mainly on price-inflated imports. The new decision means that, after the trade has absorbed as much of the profit squeeze as it can without going out of business, the Stabilization Corp. will step in and pay with treasury money the difference between ceiling prices and prices which had to be allowed producers because of cost increases.

First application of this extension of the subsidy is on the balance of the 1941 pack of fruits and vegetables remaining in the canners' hands. In this case the subsidy is restricted to basic items subject to standardization in 1942—peas, corn, green beans, tomatoes and a couple of fruits. Cost of this subsidy, limited to 50% of the difference between ceiling prices and those allowed packers (wholesalers to absorb 50%) is \$400,000.

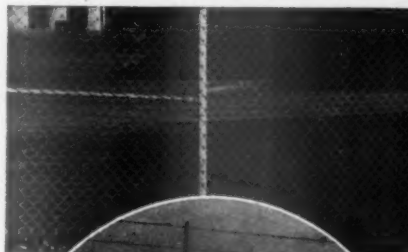
• **Meats Made Free**—After a three months' trial Gordon has found that he cannot maintain the ceiling on meats. Variations in quality and class of trade presented obstacles which could not be overcome. He is allowing meat packers to set their own prices to any customers provided these do not exceed maximum base period prices for the whole trade.

Wholesalers and retailers are permitted to add normal markups. In this decision, chain-store customers of the packers lose a battle. They wanted a ruling that packers couldn't up prices to them from what they paid in the base period, this being contrary to the rule that anybody in the trade—processor, wholesaler, retailer—was entitled to the highest price at which he had sold to anybody within the period. It means that the retail ceiling goes off meats but a check will be kept on profits.

Standardization of men's and boys' clothing is drastic, eliminating frills, following the Washington restrictions. Maximum coat lengths and trouser widths are fixed, double-breasted coats and vests banned.

BAD NEWS FOR SNOOPERS!

*All over the country
Cyclone Fence is guarding
plants that make vital
war supplies*



What greater discouragement could saboteurs and thieves find than this sturdy enclosure of Cyclone Fence? It is one sure way to prevent trouble before it begins.

The barbed wires on top of Cyclone Fence certainly make it tough to get in—and they are sure to spoil the getaway. Barbed wire extension arms are available in several types.

Day and night, Cyclone Fence is on the job—guarding the entire plant, yard inventories, railroad sidings and other important places around the plant.



SPIES and trouble-makers do not like Cyclone Fence. But safety directors, presidents and other industrial executives certainly do. For they know that this sturdy barrier of steel has helped them keep snoopers, saboteurs and thieves out of their plants.

U-S-S Cyclone Fence is made with ruggedness that means long service and low maintenance. It is constructed on sturdy steel posts, set in concrete bases frost won't budge. Gates swing freely—for the weight of the gate is supported on a special ball-and-socket hinge set in concrete.

Does your plant have this important protection? Is every foot of property line guarded against intruders? If not, let us help you work out a complete plan. We will help you choose the right type of fence and gates—and submit estimates.

CYCLONE FENCE DIVISION
(AMERICAN STEEL & WIRE COMPANY)
Waukegan, Ill. • Branches in Principal Cities
United States Steel Export Company, New York



**CYCLONE
FENCE**

UNITED STATES STEEL

32-Page Book on Fence



Send for our free book on fence. Crammed full of facts, specifications and illustrations. Shows 14 types—for home, school, playground and business. Buy no fence until you see what Cyclone has to offer.

CYCLONE FENCE
Waukegan, Ill., DEPT. 432

Please mail me, without obligation, a copy of "Your Fence—How to Choose It—How to Use It." I am interested in fencing: ☐ Industrial; ☐ Estate; ☐ Playground; ☐ Residence; ☐ School. Approximately _____ feet.

Name _____

Address _____

City _____ State _____

ADVERTISEMENT
BUSINESS PAPERS

Printers' Blueprints . . .

Thousands of leading executives and purchasing agents have seen the wisdom of calling in their printer and having him develop a unified plan for printing ALL their business stationery — letterheads, envelopes, invoices, statements and forms. The printer's plan makes these pieces more attractive and effective, gives them continuity and uniformity.

► **Money Savings, Too.** In some instances the printer's blueprint will provide for combining the "runs" of various stationery units which are used in similar



CONFERENCE PAYS DIVIDENDS

Printers demonstrate how to get better business stationery for same or less money.

quantities. Possible too, is reduction of the amount of paper used in forms, particularly important in these days of defense shortages.

► **Equipped to Plan.** Best printer for you to call in to survey your stationery needs is one who is equipped with the Nekoosa Bond Plan Book. Executives who take a few moments to go through this unusual volume with their printer will quickly see the value of developing a plan for all their business stationery.

► **Printer Paper Judge.** Your printer will include paper suggestions in his plans. He will recommend Nekoosa Bond, the paper that's "Pre-Tested from the Start," because he knows it has every quality to deliver perfect performance, both in your office and in his pressroom. It has plentiful strength and opacity, plus attractive appearance. Its surface is specially conditioned for typing and pen and ink, and permits easy, smudgeless erasures.

Your printer will tell you more about this remarkable paper when he submits your business stationery plan. Call him today.



One of the Pre-Tested Business Papers manufactured by the Nekoosa-Edwards Paper Company, Port Edwards, Wisconsin. Companion papers are JOHN EDWARDS BOND, NEKOOSA MIMEO BOND, NEKOOSA DUPLICATION BOND and NEKOOSA LEDGER.

MARKETING

Saving on Crates

Fruit, vegetable growers agree with handlers and rail carriers on fewer shipping containers. All see cost cuts.

Long-standing gripe of the produce trade and of the railroads has been the tremendous variety of containers used for shipping to market fresh fruits and vegetables. Most of these boxes, crates, and baskets are of sawed wood or veneer, though the proportion of paper-board has risen in recent years.

• **Long-Standing Criterion**—Before it can be utilized for rail shipments, a container must be accepted by the Freight Container Bureau of the Association of American Railways, and accordingly incorporated in the container tariffs. Traditional policy of the bureau was that if a submitted container would load economically and carry the contents safely to destination, it must be admitted to use.

Consequence of this attitude, plus the ambitions of growers, shippers, and receivers to achieve distinctive packages which would help their sales, and the natural creativeness of aggressive manufacturers of packages, was that package styles and sizes multiplied. In



QUITTING—BY REQUEST

"Forced Sale" instead of "Clearance Sale" would be a more accurate translation of the Japanese characters

(right) posted by one Mr. Okamoto of San Francisco, who, like thousands of Japanese, alien and American-born, is in the process of being evacuated from United States coastal areas.

**THERE ARE ONLY 10
STEAM GENERATING UNITS
ABLE TO PRODUCE
1,000,000* POUNDS OF STEAM
IN A SINGLE HOUR**

* Sufficient steam to generate all the heat and light required by a city the size of Cincinnati

**8 of these world's largest units are built by
COMBUSTION ENGINEERING**

*What this means
to the man
who operates expenditures
for boiler plant equipment
of any size*



The same skill, experience and facilities required to produce these exacting installations are available to you regardless of your capacity requirements. For these big units are only one side of Combustion Engineering's service to industry. At the other extreme are the numerous small boiler and stoker combinations (from 1000 lb of steam per hr up) which Combustion Engineering builds for power, heat and processing throughout industry. What both the large and small jobs share in common is the Combustion Engineering reputation for reliability in service and economy of operation. Whatever your steam demands may be, you too can benefit from Combustion Engineering's skill and experience.

**World's Most Complete Line of
Steam Generating and Related
Equipment for all Industrial Service.**

**BOILERS • STOKERS • PULVERIZED FUEL SYSTEMS • FURNACES • STEAM
GENERATING UNITS • SUPERHEATERS • AIR HEATERS • ECONOMIZERS
CHEMICAL RECOVERY UNITS • DRYING AND INCINERATION SYSTEMS**

A-550-A

COMBUSTION ENGINEERING COMPANY, INC. 200 MADISON AVE.
NEW YORK, N. Y.

Cut "Cut-off" Costs

with this Low Cost Delta Cut-Off Machine

When you are confronted with an urgent need for increased productive capacity in connection with the U. S. armament program—this powerful, accurate Delta Cut-Off Machine can help you. It can be used everywhere, in large shops or small, where materials have to be cut to accurate length on a production basis. It can be used for hundreds of operations now performed by costlier machines—or

being done by hand at high cost. It actually creates jobs for itself—saves time and money wherever used. It is available at about one-half the usual price of machines of this type. Right now—there's a spot in your plant for this versatile Cut-Off machine.



Cuts Practically Any Material

This Delta unit has an unusually wide range of applications. Available in two models—with abrasive wheel and with special blade for non-ferrous metals, it will cut lengths such materials as aluminum, copper, brass, steel, cast iron, monel metal, bakelite and rope, stellite, pipe, wire, manganese steel, fibrous material such as brake linings—tile, brick, carbon, porcelain, slate, hard rubbers, concrete coping and sand cores. For full details, send for latest catalog.

SEND FOR THESE FREE BOOKS

Mail this coupon for latest Delta Catalog and check other booklets in which you are interested. Write today to the Delta Manufacturing Company, 941 E. Vienna Avenue, Milwaukee, Wis.

- ☐ **DELTA CATALOG**—Descriptions and prices of full line of Delta Cut-Off machines and other Delta machines.
- ☐ **"How to Increase Production"**—Photographs of actual installations showing many cost-cutting adaptations of Delta machines.
- ☐ **"New Wings for Production"**—Illustrated story of how the aviation industry has utilized Delta machines.
- ☐ **"Light Machines in Industry"**—Illustrated reprint article by George Fairman on uses of low-cost machines in industry.
- ☐ **"Tooling Tips"**—Timely photo-newspaper showing latest adaptations of Delta machines for special needs of industry.

Name _____
 Address _____
 Business Firm _____
 City _____ State _____

DELTA
MILWAUKEE

1935, the A.A.R. began pressing for simplification, and this pressure has meanwhile forced into the discard a lot of shapes and types that were unsatisfactory or dormant. But there are still 554 authorized containers in the four tariff territories, and these include perhaps 700 different specifications.

• **Reason for Variations**—Not all of this variety is nonsense. There are basic differences in the size, shape, and natural growth habits of the products of different territories, and these influence the shipping containers or the contents. Pascal celery, from the West, is all-over bigger than eastern celery. Asparagus has its regional divergences from type. But these variations do not justify such multiplicity as the 88 different apple containers—43 nailed boxes, 41 fiberboard boxes, and 4 miscellaneous—nor the 53 celery crates, of which 43 are nailed and 10 wirebound.

Last weekend, sixty-odd representatives of growers, shippers, distributors, and government bodies gathered in Chicago at the call of the United Fresh Fruit and Vegetable Association to adopt a nationwide program of simplification. The boys knew that if they did not take definite steps, Washington would probably pass a law or hand down an edict.

• **Getting Down to Work**—This was not just a resolution-passing conference. Instead, it divided into three groups, citrus fruits, deciduous fruits, vegetables. Each group considered the decisions and recommendations arrived at by dozens of local shippers' meetings. The three groups really put their containers through the wringer. They brought in hardboiled recommendations to eliminate between 301 and 355 of the 554 authorized varieties. The citrus people thought they could eliminate 14 shapes; the deciduous group, 131; and the vegetable interests, 156. Additionally, there are 54 more subject to probable elimination.

• **Some May Be Saved**—As it is, the Freight Container Bureau is committed to placing all of the proposed eliminations on its next docket (coming up between Apr. 15 and May 1). There will be hearings on any containers which anyone concerned may wish to save from limbo. Some of the currently condemned will doubtless be rescued, and others will win reprieves. But, by midsummer, look for a major decrease in the number of authorized containers.

The sentiment of the A.A.R. is, hereafter, to admit to use no container which does not promise to do a better job in protection, cost, or loading than those already authorized.

As soon as a reasonable simplification is finally achieved, the railroads plan to consolidate in a single volume of perhaps 150 pages the four 200-page books now required for the four territorial container tariffs.

Advertising's Ups

Bolstered by soft lines, the figures for four major media favor the optimists, but durable goods linage continues to skid.

Wartime conditions have given rise to two schools of thought about the future of national advertising. One school pessimistically believes that the general decline in the production of consumer goods means a precipitous tumble for advertising. The other preaches that so long as there's plenty of spendable income to go for foods, drugs, and liquors, advertising will remain in pretty fair shape.

• **What the Figures Show**—Last week school No. 2 still held a statistical advantage. National advertising in four major media had registered a 6% improvement during January. Following are the figures, based on data from Media Records, Inc., and Publisher's Information Bureau:

	Jan. 1941	Jan. 1942
Magazines*	\$14,270,701	\$16,514,867
Farm Papers*	1,745,858	1,705,402
Network Radio....	9,129,029	10,269,527
Newspapers**	9,724,242	8,637,401
	\$34,869,830	\$37,127,197

* Both January and February issues are counted, except in the case of weekly magazines. Farm paper data are based on national and sectional publications only.

** General and automotive advertising only.

Admittedly, parts of this picture may be distorted. For one thing, some of the magazine linage which shows up in that glowing \$16,514,867 was scheduled prior to Pearl Harbor. Similarly, radio contracts canceled as of a future date still appear in the network figures. As something of a counterbalance, however, newspaper linage was converted into dollars by using the same conversion yardstick for both 1941 and 1942. A higher rate should probably be applied to 1942.

• **Magazines' Prospects**—Magazines, as a whole, are expected to hold their advertising gains in the consumer field through March. But April will probably see a drop. Whether the decline will be permanent thereafter, or will represent merely a temporary switch in advertising plans, can't be told as yet. Business and industrial advertising continues to soar, and the publications in that category foresee no letdown.

Thus far the magazines can thank food, drug, and toiletries advertisers. Food advertising is up around 23%; drugs-toiletries, 41%. This has been reflected largely in the women's magazines, though some of the weeklies have had their due share.

• **Automotive Tailspin**—Automotive advertising, however, has dropped 56%

Sabotage

WALKS THROUGH THE GATE



Sabotage

is the act of persons!

Persons in war industries, or industries serving war producers, should be thoroughly investigated to make sure of their loyalty and dependability.

Production should not be exposed to persons who have been involved in disloyal activities or expressed disloyal sentiments, nor to persons who are subject to pressure through family ties in enemy or occupied countries.

Investigation of so large a number requires use of all available means to check family background, antecedents, associates and employment over a period of years, often at several scattered communities.

Retail Credit Company with an organization reaching into every city and hamlet in the United States and Canada makes such investigations; is now making them for more than 600 War Industry plants. For 42 years it has supplied character reports on persons. It is well prepared for this Wartime phase of its regular Peacetime function.

To arrange for this service, contact the Retail Credit Company manager in your city or the Home Office in Atlanta, Georgia.

RETAIL CREDIT COMPANY

Founded 1899



BRANCH OFFICES IN 106 PRINCIPAL CITIES

A SYMBOL that has become A PLEDGE



This Holophane Seal made its first appearance just before "Pearl Harbor". Since then its significance to this organization has grown tremendously. . . We have bent every effort to provide light that accelerates production lines. Our engineers and field advisers have shown hundreds of plants the way to faster, smoother war production with lighting planned to meet their specific production needs.

Convert WASTE into WEAPONS with HOLOPHANE Planned Lighting

- **Conserve Man Power**—correct seeing conditions save man hours, reduce accidents, errors and strain.
- **Conserve Materials**—specify lighting units which are constructed to require a minimum of critical metals.
- **Conserve Electricity**—by the installation of lighting that provides maximum illumination on working areas with minimum usage of current.



HOLOPHANE
HIBAY
REFLECTOR
NO. 990

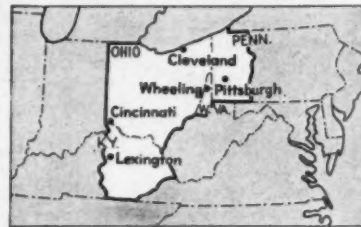
In this period of emergency, the Holophane Engineering Dept. stands ready to serve industry with counsel on lighting problems. Call on them without obligation.

Holophane
COMPANY, INC. SINCE 1898
182 MADISON AVENUE THE HOLOPHANE CO. LTD.
NEW YORK CITY 100 145 YONGE ST. TORONTO CAN.

The Regional Market Outlook

CLEVELAND (Income Index — 151.0; Month Ago—147.6; Year Ago—125.3)—This Reserve district is just about over the hump of conversion dislocations. At hard-hit Toledo, Willys-Overland and Auto-Lite are now taking on workers as fast as they are let go elsewhere in the city. And in Cincinnati, aircraft and machine-tool hirings are more than offsetting auto layoffs.

Prospects are especially bright here in Cleveland. Employment now is higher



74,027 sq. mi. pop. 11,809,520

RICHMOND (Income Index—160.4; Month Ago—156.2; Year Ago—143.8)—Outside the booming northeast section of this Reserve district—Baltimore, Washington, Hampton Roads, and Richmond (BW — Feb. 14 '42, p. 58) — sales prospects generally tend to lag.

Priorities dislocations in the "regular" lines—coal, textiles, lumber, etc.—are almost nil, but, operations now are near capacity, and so expansion is limited. Too, there is a relative paucity of war work, except at such arms towns as Elkton and Hagerstown, Md., Radford and Pulaski, Va., Badin and Wilmington, N. C., Charleston, S. C., and cantonment sites at Fayetteville, N. C., and Spartanburg and Columbia, S. C.

Arms employment has lagged in West Virginia, too. However, new construction projects, to employ 10,000, soon will help. Morgantown and Martinsburg are outstanding in the north, and Point Pleasant and South Charleston in the

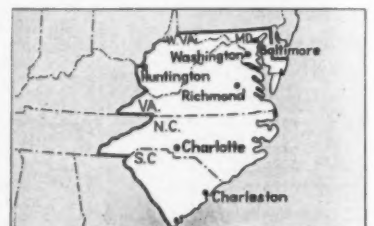
than ever, and machine-tool and aircraft manufacturers are busy enlarging previous plant additions. Moreover, shipbuilding, long moribund, is booming here and at Lorain and Ashtabula.

Elsewhere, a barge yard, ordnance depot, and magnesium works are going up, to the benefit of payrolls in Fairport, South Point, and Ironton, Ohio. Increased Ohio River traffic is lifting activity at Wheeling, where a chemical factory is soon to be built and an \$8,000,000 power plant may be added. Formerly abandoned factories at Canton, New Castle, and other steel towns in the eastern part of the district are busy again.

Auto, tire, and appliance lines are not alone in converting. Steel mills are turning out plates for ships instead of sheets for cars; the pottery industry is producing stoneware for chemical firms; and paper box makers, working 60% on government orders, are redesigning packages to save materials.

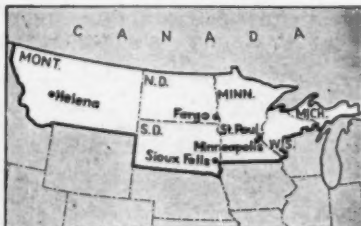
Kanawha Valley, which area takes top rank in the state (BW—Oct. 18 '42, p. 48). Next best are such coal towns as Oak Hill, Williamson, Logan, Welch.

Farm income last year gained less than in the nation, except in North Carolina. Growing conditions, poor in 1941, will be all-important for rural prospects. But it is hardly encouraging that livestock numbers on district farms—cattle, cows, hogs, chickens—are up less than average from 1941.



152,471 sq. mi. pop. 12,330,219

TWIN CITIES (Income Index — 146.2; Month Ago—140.2; Year Ago—119.4)—Especially heavy marketings, at higher prices, are lifting livestock income gains above average in this Northwestern Reserve district. And, even more promising for future receipts, increases since 1941 in numbers of cattle, cows, sheep, hogs, and poultry on farms have substantially outrun the nation's. Gains registered in North and South Dakota, particularly, have been spectacular.



412,304 sq. mi. pop. 5,542,966

With prices 60% higher than a year ago, new drying plants planned, and feed supplies abundant, egg production is now outstripping projected goals; returns, of course, are up sharply. Similarly, plantings of soybeans and flaxseed may well exceed anticipated boosts. Quotations have jumped some 20% of late, reflecting the enlarged demand for oils.

Retail sales gains in rural areas (particularly at such North Dakota centers as Fargo, Bismarck, and Minot) now are running higher than in factory centers—a trend which may well continue. Metalworking in Albert Lea, Minn., and Eau Claire, Wis., is facing dislocation, and arms work here in the Twin Cities and at Duluth-Superior is still largely in early-expansion stages; major additions to payrolls are not expected to take place until late spring. Workers in the Iron Ranges, ready to go full blast by Apr. 1, are hoping for an early opening of lake transportation.

in magazines (hitting the weeklies hardest) and 64% in newspapers. The latter have thus lost their No. 1 national advertiser for the duration. General lineage in newspapers is up 4.2%, and retail has gained 0.7%. But financial, classified, and department store advertising is down, so that all in all the papers have suffered a 4.1% drop.

Since newspaper statistics are not broken into product categories, it's hard to tell where the 4.2% increase in "general lineage" originated. But the suspicion is that the papers got it where the magazines got theirs—from the food and drug people—plus, no doubt, higher wine-liquor expenditures.

Thus the national advertising trend is still maintaining its step with the consumer production trend. The soft lines are in pretty good shape. But the durable-goods situation keeps heading toward zero.

Arnold Hits Again

California Unfair Practices Act receives second blow with indictment of grocer groups as violators of antitrust law.

A federal grand jury in San Francisco last week initiated Part Two of Thurman Arnold's campaign to challenge the Golden State's price-control laws, statutory grandparents of all such state legislation. Acting while the trial of Los Angeles food distributors on charges of violating the Sherman Antitrust Act in their attempts to enforce California's Unfair Practices Act (BW—Feb. 28 '42, p45) was droning through its preliminary stages, the grand jurors indicted a batch of northern California grocers on the same charge.

• **About 9,000 Stores Hit**—In all, 17 retail grocers' associations, three chains, and 14 officers of the defendant groups were named in the indictment. About 9,000 stores with an annual sales volume of some \$300,000,000 are represented by the associations which have become targets of Arnold's latest actions.

As in the Los Angeles case, the indictments charge that the groups conspired to fix retail prices by distributing bulletins "containing high artificial and noncompetitive prices which had been agreed upon in violation of the Sherman Act." They charge, too, that the California Unfair Practices Act, prohibiting sales below cost, has been used "as an instrument of coercion" to force recalcitrant grocerymen to hold up prices.

• **Spying Is Charged**—In this connection it is alleged that the organizations spied upon grocers who failed to comply with the artificial prices, and that they threatened to and actually did bring suit un-

*Flick a Finger
and a giant goes to work!*



At the touch of a fingertip or toe this almost-human giant goes to work in the production of important aircraft parts. The outstanding feature of this 2,000-ton press is its turret table which meets the exacting demands of planned production sequence.

In addition to maintaining thereby the production speed that is so necessary in wartime, Birdsboro Hydraulic Presses provide economical operation that will help to insure profitable production later on. If yours is a press problem, it pays to consult Birdsboro.

THE BIRDSBORO STEEL FOUNDRY AND MACHINE COMPANY

Plants at Birdsboro and Reading, Pa.

BIRDSBORO
Hydraulic Presses

BUILDERS OF . Hydraulic Presses . Steel Mill Equipment . Rolls . Special Machinery . Crushing Machinery

CONCRETE

*has what it takes for
war construction*

FIRE PROTECTION—helps prevent fires or check their spread; minimizes fire loss whatever the cause. Concrete won't burn.

STAMINA—great strength, rigidity, stability to resist war hazards.

CONSERVES CRITICAL MATERIALS. Many concrete structures require none.

SAVES TRANSPORTATION—the bulk of concrete materials is usually found locally.

SPEEDS THE JOB—a rapid, all-weather type of construction.

ADAPTABLE to practically all types of durable construction.

ECONOMICAL—concrete's durability means less wartime drain on labor for repairs and maintenance, less upkeep cost, less final cost.

Our technical staff is ready to help you engineer and architect with concrete design and construction problems on airport runways, high-

ways, barracks, housing, arsenals, bridges, docks, hangars, industrial plants or other structures that are vital to the war effort.

PORTLAND CEMENT ASSOCIATION

Dept. 3b-12, 33 W. Grand Ave., Chicago, Ill.

A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work

BUY DEFENSE STAMPS AND BONDS . . . SUPPORT THE RED CROSS

der the law in order to compel acceptance of noncompetitive prices. Provisions of the law are said to have been misrepresented to independent grocers.

Members of the organizations were required, according to the indictments, to add 2% of the cost of articles purchased from out-of-state manufacturers to the retail price.

• **Among Those Named**—The three indicted chains are Safeway Stores, Inc. (which pleaded guilty to similar indictments in Los Angeles), Hagstrom's Food Stores, Inc., and Purity Stores, Ltd. Principal associations indicted are the California Retail Grocers and Merchants Assn., Central California Retail Grocers and Meat Dealers Assn., the Food Trades Institute, and Food Industry Bureau (the last two set up by the C.R.G. & M.A. to help police the fair trade laws).

FDA Sustained

U.S. judge who held that circulars describing product did not constitute labeling within act of 1938 is overruled.

Breathing is a bit easier around the Food & Drug Administration these days because the federal circuit court in San Francisco has plugged, at least temporarily, the first loophole found in the Food, Drug, and Cosmetic Act of 1938 by a United States district court.

• **For FDA or FTC?**—District Judge Lloyd L. Black of Tacoma, Wash., was the man who first rejected FDA's contention that circulars describing a drug product constitute labeling (over which FDA has jurisdiction) whether or not they are shipped with packages of the product. Judge Black declared circulars were advertising matter, subject to the Federal Trade Commission's jurisdiction (BW—Sep. 27 '41, p. 64).

Later, District Judge F. Ryan Duffy ruled that circulars were "advertising pure and simple." Duffy was a member of the Senate when the Wheeler Act was adopted giving FTC jurisdiction over food, drug, and cosmetic advertising. His decision has been appealed to the circuit court in Chicago.

• **Nue-Ova Seizure Involved**—The San Francisco circuit court's decision involved an FDA seizure of Nue-Ova, a drug represented as helpful for arthritis. The manufacturer shipped his circulars, which FDA said contained false and misleading representations, separately from packages of the drug. They were later associated with the product in retail displays.

Reversing Judge Black's decision, the circuit declared that "most, if not all, labeling is advertising." The case may go to the Supreme Court.

IT'S LATER THAN WE THINK!



Dealer Reward

General Motors program would "pay off" all its outlets that stick until after war with 10% bonus in new cars.

Detroit, with its eye on the wartime decimation of the ranks of the country's automobile dealers, is giving special attention to further details of General Motors' dealer-help program which broke into the news with announcement of the company's plan for repurchasing 1942 models, 1942-model accessories, and genuine repair parts for 1939-42 models (BW-Mar. 7 '42, p. 56). These throw light on Detroit's postwar thinking, for General Motors is offering postwar inducements to the dealer who stays in business and provides service during the period of suspended car production.

Peacetime Priorities—For two years after production is resumed, says the company, such a dealer can count on priorities in car shipments, assuring him preferential position in what he might expect to be a strong sellers' market. The program is that, after setting aside a reserve of 15% of resumed production "to satisfy changed conditions of demand," G. M. will allot him 40% more than the annual percentage of production than he got in 1941.

Thus, if a dealer sold 1% of 100,000 cars disposed of in his zone in 1941 and if postwar sales conditions are equal to 1941 (the highest year on record), he is to count on delivery of 40% of an allotment of 85,000 cars to his zone, or 1,190 units. This is subject to the availability of cars," but as the course of the war may change the best-laid plans, the presumption is that the dealers who keep going will reap a rich reward as compared with new postwar appointees.

Same Models—Meanwhile, Detroit figures from previous statements by General Motors officials that production will be resumed on 1942 models, or cars very similar, to allow time for engineering and testing of new ideas and materials arising from the war effort. It is known, however, that cognizance has been taken of the great expansion of aluminum production by patents on automobiles with composite aluminum and steel frames and body structures.

Reports on the dealer-survival outlook show that, so far, the mortality has not been serious (16,300 now against 17,000 last year in the case of G. M.) but it is expected to jump with increasing rubber and gasoline shortages. Dealers' reluctance to accept lower-priced grades with poor rubber in exchange for later models is said to be slowing up the turnover on used car stocks.

TIME is short. None too much to build \$5 billion worth of war plants this year. The engineers and contractors who are doing the job need plenty of help. They need all the "know how" there is.

The Editors of Engineering News-Record recognize this need. And, week by week, they report the latest ideas and practices that save construction time.

Most manufacturers of construction products have a specialized "know how"—a knowledge of how to use their products with greatest speed and efficiency.

Advertising is the quickest and cheapest way to get this information to where it's needed!

If you transmit such information to engineers and contractors, you help them . . . and yourself. For, by urging quick and efficient use of your products, you also promote the products themselves.

Product promotion now will pay big dividends after the war, too, when a vast new peace-time construction program will begin. By selling the war builders of today, you influence the peace-time builders of tomorrow.

These men want time-saving product information. In hundreds of interviews they've asked repeatedly for specific data on how to do it faster!

Reports of these interviews are available on request. They're packed with product promotion ideas. Some of them may help you. Just use the coupon.

Engineering News-Record's
Annual Construction Costs Issue
April 23, 1942

TIMELY—because it saves time in the vital planning-financing-bidding stage . . . by providing labor, equipment and material costs, finance and insurance rates, specifying and buying data.

PRODUCTIVE—because it's used for 12 months by engineers and contractors . . . reaches 33,000 paid subscribers and 60,000 extra readers . . . offers a bonus circulation of hundreds of extra copy sales at \$2 each . . . contacts buying influences on more than 95% of all engineered construction projects (\$500,000 or over).

IMPORTANT NOTE: High-attention value advertising positions opposite cost sections are available at moderate premiums. Use the coupon for further information.

ENGINEERING NEWS-RECORD

Army Camps • Airports • Shipways • Docks • Air Bases • Waterworks • Industrial-Commercial-Public Buildings • Bridges • Dams • Shipyards • Tunnels • Naval Bases • Defense Housing • Highways • Pipe Lines • Waterways • Sewage Disposal • Drainage • Arsenals • Factories

A MCGRAW-HILL PUBLICATION

A. E. Paxton, Manager, Engineering News-Record
330 W. 42nd St., New York City

Send me booklet:

- ☐ "What Construction Men Want to Know About Equipment."
☐ "Engineers and Contractors Tell What They Want to Know About Building Products."

Give me full information on . . . preferred positions opposite important cost sections in the "Construction Costs Issue" . . . market data . . . subscriber coverage . . . buying practices.

Name Title

Company

Address



"Give us the tools..."

...and we will finish the job." Men do their best work with the finest tools and equipment.

Whenever a worker lifts heavy parts in a production line (or elsewhere) a 'Budgit' Hoist relieves him. The results are greater production at less cost and a happier worker free from danger of strain and rupture.

'Budgit' Hoists cost from \$119. up with lifting capacities of 250, 500, 1000 and 2000 lbs. For complete information, write for Bulletin 348.



'BUDGIT'
Hoists

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of 'Shaw-Box' Cranes, 'Budgit' and 'Load-Lifter' Hoists and other lifting specialties. Makers of Ashcroft Gauges, Hancock Valves, Consolidated Safety and Relief Valves and 'American' commercial instruments.

FREE BOTH HANDS WHILE PHONING with "HOLD-THE-PHONE"

Fits any cradle phone. Holds phone firmly to ear, cradles "phone-arm cramp," frees both hands for making notes, paper-shuffling, etc. Practical, inexpensive, and a pleasure to use. Hold-The-Phone Co., SINNERS, DAYTON, O.

\$1.00
Mail \$1.00 or order on letter-head or purchase order. (In Ohio add sales tax.) Write for Special Quantity Prices

What's on your mind?

PROBABLY plenty these days. If it's anything associated with Management personnel you need—or placing your services—if it has to do with financing, plant expansion (or disposal) or product distribution, other readers of Business Week can undoubtedly solve your problem. You can get their attention at small cost (50 cents a word) through "clues" non-display advertising in Business Week. Copy for March 21 required by the 17th.

PRODUCTION

Steel Cans?

Confidence in bonderizing rises so fast that experts see use of tin disappearing—but machinery is hard to get.

Just a month ago, Business Week reported that "two processes—electroplating and 'bonderizing'... are going to help stretch the nation's supply of tin, as tin was never stretched before" (BW—Feb. 14 '42, p. 64). Several months hence, after new coating equipment has been installed by the sheet mills and shaken down, there is a strong possibility that bonderizing alone will begin to stretch tin right out of can making (which used 48,000 of the 115,000 tons of tin consumed by the United States in 1941).

• **Confidence Rises**—A month ago, the can makers were "not entirely sure that bonderizing will stand up like a heavy coating of tin against tomatoes, corn, kraut, and certain other obstreperous canned products..." Now, as the result of some promising accelerated tests, at least two of them are beginning to think that bonderized sheet can be used for any canning purpose now served by tin plate. One of them is even experimenting with silver solder for side seaming as insurance against the remote possibility that tin solder will all be commandeered for direct war production.

Actually a complete swing-over to bonderizing would have to wait not only for coating equipment, but for the test of time in canners' plants, on dealers' shelves, in consumers' homes. The significant thing for the present is that the can makers, doubtful a month ago, are now satisfied they can turn out practically as many bonderized cans per side-seaming machine (300-400 per minute) as tin. And in their secret hearts they are not displeased that the term "steel cans," with its connotations of strength and durability, may eventually displace tin cans in the language. After all, they always have been more than 98% steel.

• **Look Much Like Tin Cans**—Contrary to popular impression, the new cans will not be black but will have a "golden sheen," not unlike the color of the heavily lacquered interior of a standard beer can. All but the most observant users will see cans looking like those which have fed them since babyhood. No new techniques of can opening need be learned—nor can filling and closing for that matter. Where the idea of

black cans came in is that the new ones will be made of bonderized black sheet—and black sheet is simply steel-makers' talk for uncoated, but still very bright and shiny, sheet steel.

Bonderizing, the patented process of Parker Rust-Proof Co., Detroit, adds the golden sheen by converting the surfaces of sheet steel chemically into a rust- and corrosion-resistant iron phosphate coating. Lacquering accentuates the color. Sheet steel is simply passed through a series of baths—cleansing, bonderizing, rinsing, etc.—on a series of rubber rollers with the dual capacity of conveyors and applicators. When the sheets go into cans, they will be lacquered for further protection and labeled just as they have been for years. • **Big Capacity Planned**—Capacity of bonderizing equipment now on order by several steel mills and a large manufacturer of bottle caps is estimated at 10,500,000 base boxes of 100 lb. each annually—enough to save 6,560 tons of tin at the new coating rate of 1.25 lb. per base box. Approximately the same capacity of electrolytic tin plate—capable of saving $\frac{1}{3}$ that amount of tin by using only a $\frac{1}{4}$ -lb. coating—is likewise on order.

Round about the turn of the year, American Can, Continental, National, and all the other can makers ought to be sitting pretty but they won't. Their No. 1 problem is not materials and supplies but machine capacity. With one hand, WPB lays prohibitions on beer cans, coffee cans and bean cans; with the other it builds up orders for food containers, bandage cans, shoe "dubbin" cans, gas mask cans and a host of military necessities requiring more capacity than has been released.

Tin—at a Price

Recovery from old cans looks like a job for Uncle Sam, even with improved process, because costs still are high.

The process for recovering tin from used cans, announced last week by the Metal & Thermit Corp., as "completely developed" in its San Francisco pilot plant, isn't a fundamentally new detinning method but it does iron out several of the kinks in existing processes. For instance, one of the drawbacks has been the trouble caused by labels, lacquer, and lithograph coatings on the used cans.

• **No More Preparation**—The Metal & Thermit test plant is accepting empties as they are discarded by housewives and



NORTON ABRASIVES

AIRCRAFT GRINDING

There's a shadow over America
—a challenge to the workers
on every precision-production
line.

★ ★ ★

Precision—grinding precision
—means interchangeability.

Precision—grinding precision
—begets speed.

Aircraft crankshafts, cams,
valves, pistons, cylinders—all
made mechanically perfect by
grinding.

Norton Grinding Machines
and Norton Grinding Wheels
—vital to precision-production.

WHEN IT'S AN ABRASIVE PROBLEM, CALL IN NORTON ENGINEERING

NORTON COMPANY
Worcester, Mass.

BEHR MANNING DIVISION, TROY, N. Y.
(ABRASIVE PAPER AND CLOTH)

METAL SHORTAGE

will not affect
Elliott's
all fibre, typewriteable
address cards



This is the time to follow the example of the ever-increasing number of leading concerns in all fields who have changed to the modern Elliott system with its non-metal Plastikote address cards! In war or peace they're better because:

1. They can be stenciled in a few seconds on any ordinary typewriter.
2. They flex without remaining bent, so will not jam.
3. They are practically noiseless in operation.

Send for our catalog with complete information and address of our nearest branch office.

THE ELLIOTT ADDRESSING MACHINE CO.
151 Albany Street, Cambridge, Mass.

Elliott
ADDRESSING MACHINES

without any special preparation. Heretofore cans had to be stripped clean before going through the works.

Significance of the development, however, is that it anticipates the possibility of the government's eventual entry into the detinning business, at least temporarily. The process doesn't look feasible for private operation because of its cost, officials in charge of the San Francisco development insist, but if the government wants tin and is willing to spend the money to get it, the Metal & Thermit plant can produce it.

• **Present Operations**—What few detinning operations there now are operate chiefly upon clean trimmings and clippings from can factories and from plants fabricating tinned sheet steel. Present hot dipped tinplate, coated with from 1.25 to 1.35 lb. of pure tin per base box, yields about 22 lb. of tin and one ton of scrap iron to the long ton of waste material.

At current market quotations, these materials are worth somewhat less than the cost of recovery. If the government reduces future tin content of cans to $\frac{1}{4}$ lb. per base box by changing over to electrolytic methods of tin coating, prospects of a financially profitable detinning industry seem even more remote.

• **Academy Pessimistic**—In spite of the fact that a committee of the National Academy of Sciences last year gave a thumbs-down report to the OPM on the advisability of detinning waste cans, there is a growing belief that the government may soon seek recovery of at least part of the 40,000 tons of tin that went into cans in 1941 and approximately 24,000 tons made available for 1942.

According to estimates, approximately one-half of tin used for tin plating might be recovered under conditions of government subsidy. The present Metal & Thermit pilot plant in San Francisco, with a capacity of some 1,000 tons of cans a month, is operating at the rate of only 4,000 tons a year. Surveys place the amount of empties available in the San Francisco Bay region at 1,500 to 2,000 tons a month.

• **How Plant Works**—The unit comprises unloading equipment, inspection station, rotary screens for dirt removal, an incinerator for charring cans to destroy fat, paper, lacquer, and other combustibles, and to separate the carbonaceous residue, shredding and pre-washing equipment, storage facilities, and complete equipment for continuous detinning by the alkali process.

If the government expands its salvage drive to include the housewives' used tin cans, small detinning plants would have to be established in various population centers because of the difficulties of transportation (baled cans cannot be detinned and unbaled cans weigh less than 5 tons to the box car).

At present the salvage of tin cans is largely for their iron content.

NEW PRODUCTS

Latex Extension

By a new Latex Extending Process, developed by Union Bay State Co., 50 Harvard St., Cambridge, Mass., the volume of latex (liquid rubber) for cementing, impregnating, and coating is increased from 50% to 300%, depending upon the requirements of a particular job. The filler material that is used "responds to the same reagents, has the same wetting out properties, penetrates and dries in the same manner, and even is susceptible to vulcanization . . . while retaining the major characteristics of the original product as well as a good proportion of its natural strength."

Beverage Icer-Dispenser

Working on the principle that the palatability of fruit juices and other beverages is considerably increased—and vitamin losses minimized—by cooling them to a point where soft ice crystals



appear in the liquid, Froid Laboratories, Inc., 513 Division Ave., S., Grand Rapids, Mich., has developed the Crystal-Icer, a new refrigerating dispenser for factories, stores, and restaurants. Since the ice is already in the beverage when drawn, time normally consumed by the operator in adding cracked ice is conserved. Models are available with $\frac{1}{2}$, $\frac{3}{4}$, and $\frac{1}{2}$ -hp. motors and refrigerating units to chill 2 to 4 or more gallons of beverage per hour.

Blackout Flashlight Cover

Practically any flashlight can be dimmed to a soft reddish glow—enough to light one's way during blackouts yet invisible to air raiders—with the inex-

pensive new Blackout Flashlight Cover, fabricated by Blossom Mfg. Co., 79 Madison Ave., New York. It is an oiled silk hood, much like a miniature bowl cover, which snaps on or off in a split second.

Tap Reconditioner

Shortages and slow deliveries on taps have fewer terrors for the plant equipped with a Detroit Tap Reconditioner, new product of Detroit Tap & Tool Co., 8432 Butler St., Detroit.



The machine combines three units: for tap chamfering, spiral pointing, and point polishing. Precision indexing is provided for grinding taps with two to seven flutes at correct angles. Threading costs are reduced by improving the efficiency of taps during considerably longer useful lives.

Fire Extinguishing Powder

Many types of fires can be extinguished with a few handfuls of "Fire-Kill," a new chemical powder: gasoline, fuel oil, paint, clothing, furniture, magnesium, thermit, etc. It is produced by National Chemical Corp., 144 Union Ave., New Rochelle, N. Y., in 3-lb. containers for household use, 5-, 10-, and 20-lb. containers for industrial and commercial uses.

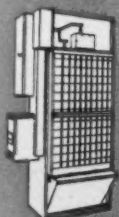
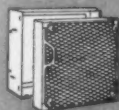
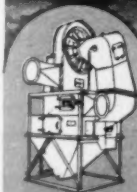
Iron Bearings

If your work is too far down on the priority list to entitle you to prompt deliveries on self-lubricating bronze bearings, you might consider the new Self-lube Porous Iron Bearings, made by Keystone Carbon Co., 1935 State St., St. Mary's, Pa. Standard sizes are interchangeable with bronze bearings in most applications; special sizes are made to order.

The porosity of the bearings, which are pressed and sintered out of powdered iron, ranges from 25 to 35%, giving them adequate capacity for storing lubricant between oilings.

Air Borne DESTRUCTION

can come to Industry too!



'DUST STORMS' in Industry, like the tragic Dust Bowl disaster of 1938, can cause incalculable losses—destroying materials, finished products and man hours of work. But dust, the air-borne saboteur, is *one industrial menace* we can effectively fight within our war production plants.

Today, American Industry is awake to the necessity for adequate dust control. Many hundreds of existing and converted plants—and practically all new defense plants—have installed American Air Filters for the elimination of atmospheric dust and AAF Roto-Clones for process dust control.

To meet Industry's expanding need for clean air, the American Air Filter Company is operating 16 to 24 hours a day—supplying practically 100% of its output to war materials manufacturers. Write for booklet "AAF In Industry," the story of industrial dust problems and their solution.

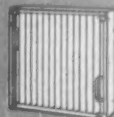
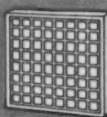
AMERICAN AIR FILTER CO., Inc.

INCORPORATED

307 Central Avenue

Louisville, Kentucky

IN CANADA: DARLING BROS. LTD., MONTREAL P. Q.



Want To Know What GOOD INSTITUTIONAL ADVERTISING is?

New manual answers that, and many other urgent questions about war-time advertising.

FREE

90 Pages of Practical Help

The "Guide" demonstrates, by example, how your advertising, too, can help fight the war; help customers; help build a sound foundation for future business.

Shows How Advertising Can Help Our War Effort.

"A Guide To Effective War-Time Advertising" contains actual cases, described by the manufacturers concerned, illustrating how to use your space to transmit important information from where it is to where it is needed; quickly, accurately, and economically. In the "Guide," business leaders tell what their problems were (many have not been able to sell a thing to regular customers for almost two years), how they are using advertising to help solve current customer-relations problems, and what they are getting out of it.



A VERITABLE

"WAR ALBUM"

The "Guide" is only our introduction to a collection of up-to-the-minute case studies that will be sent to you without cost as they're produced, if you order your "Guide" now.

Want Advertising That Works Today?

Today's conditions have increased rather than lessened the need for making business paper advertising useful, informative, and specific. Every case illustrated in the "Guide" is the kind of advertising that demonstrates its own worth; that needs no defenders! It shows how to make your advertising useful to your customers and prospects at a time when help is so desperately needed.

The "Guide" will show how your company can use advertising today, not as a license to boast, but as a vehicle of communication that will help you help fight the war, and help you build a sound foundation for future business. One copy is yours for the asking, if you'll ask before they're all gone.

FREE

THE ASSOCIATED BUSINESS PAPERS
Dept. N

369 Lexington Avenue, New York City

Please send, without obligation, my free copy of "A Guide To Effective War-Time Advertising."

NAME

POSITION

COMPANY

STREET

CITY & STATE

LABOR & MANAGEMENT

Trouble in Steel

Not only does NWLB face test of its ability to keep peace—while warding off inflation—but Weir may kick over traces.

The nation's major labor controversy right now is the dispute over rates of pay and union security between C.I.O.'s Steel Workers Organizing Committee and four Little Steel companies. To settle that dispute without any stoppage of steel production is the No. 1 job of the National War Labor Board. Failure would put the quietus on the NWLB and the whole idea of voluntarism in the handling of labor disputes in wartime.

• **Board's Problem**—Yet, even if NWLB might be inclined to approve the \$1-a-day wage increase asked by SWOC in order to assure uninterrupted production, it will be deterred by considerations of economic policy. Specifically, Price Administrator Henderson has maintained that a \$1-a-day boost in steel may set off a disastrous wage spiral and make it supremely difficult to hold prices down. Individually and collectively the members of NWLB know that the Little Steel case will severely test their ability to maintain labor peace and effectively protect the public interest.

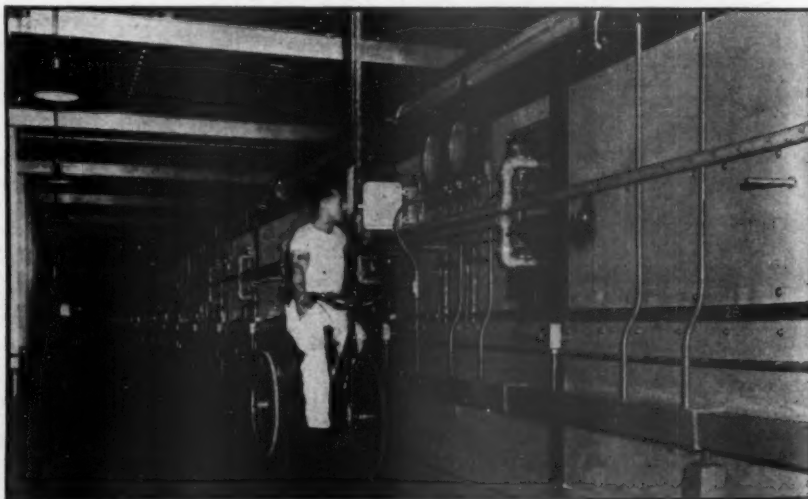
• **Weir's Position**—The four steel companies which are opposing the demands

of S.W.O.C. are Bethlehem, Republic, Youngstown Sheet & Tube, and Inland. Weirton Steel (subsidiary of National Steel) is not directly involved. But this week there was an intimation that this, Ernest T. Weir's company, might take the initiative away from the quadruple-headed united front, elbow the War Labor Board and its weighty considerations aside, and play a decisive rôle in the disposition of the issue of steel wages.

If that does happen it will be a repetition of what occurred in 1937 and again last April when independent action by Weir pushed the rest of the steel industry into granting pay hikes which the other companies were extremely reluctant to give. In 1937, Weir was the first to announce a \$5-a-day basic wage, and last spring he gave his 21,000 employees a 10¢-an-hour raise while U. S. Steel and S.W.O.C. were deadlocked over that very question.

• **Influence on Price Level**—Government economists have maintained that the Weir action, which made the 10¢-an-hour wage increase the standard labor demand in 1941, was instrumental in nudging the cost of living up and up and up. They shudder at the thought that he might be preparing another such gesture at this time, certainly much more critical from the standpoint of inflation.

That he is at least considering it was evident from this week's announcement by an independent union of Weirton employees (which the C.I.O. has often



MOUNTIE

It's a long way around the ovens at the Oakland, Calif., plant of Loose-Wiles Biscuit Co., if you have to hoof

it—the equivalent of a walk around a city block—but inspectors regularly use tricycles to check controls of what is reputed to be the world's largest and longest battery of ovens.

charged, and Washington labor officials suspect, is dominated by the company) that it had asked for a \$1.25-a-day wage increase, 25¢ more than S.W.O.C. is after.

• **An Understanding?**—Considered labor opinion held that the independent group would not “stick its neck out by asking for something it could not get.” There was general belief in union circles, shared by some government observers, that Weir had at least signified his willingness to entertain the idea of a \$1.25 raise before the Weirton organization publicly announced that the request had been made.

Why Weir might do such a thing is clear. By granting wage increases to his employees before S.W.O.C. secured them for the rest of the industry he has kept the C.I.O. union from attracting a majority in Weirton plants. By giving an even more generous pay boost than the S.W.O.C. is asking from Little Steel now he can go far to convince his employees that they have no need of an outside union to protect their interests.

• **Negotiations in Danger**—If Weir goes through with such action, he will make it virtually impossible for NWLB to award S.W.O.C. less than the \$1 it is asking. NWLB may even be forced to give S.W.O.C. some definite form of union security because the union will contend that its life is menaced by a “company union” whose employer doesn’t seem to worry about labor costs.

In any event, unilateral action by Weir, which now looms as a distinct possibility, would effectively upset the stage being carefully set for the biggest labor case in years.

Squeeze Play

Babcock & Wilcox case is illustration of what’s going wrong with labor settlements under current conditions.

The National War Labor Board found a compromise agreement acceptable to both parties in a dispute at the Babcock & Wilcox Co.’s Barberton, Ohio, plant last week, but almost before it could turn around it found another B. & W. case on its docket.

The new one didn’t come from Barberton, but from Bayonne, N. J., and an entirely different union was involved. Yet the issues were practically identical: a demand for a wage increase and the union shop. It looked as though B. & W., with scattered plants under contract to different unions, was on the same kind of a merry-go-round as Allis-Chalmers (BW—Feb. 14 ‘42, p. 72) with union competition and a “let’s have a



Tough Problem + Stainless Steel = Product Improvement

There is no time for repairs when you’re “peeling off” at 20,000 feet to dive at the enemy. That’s why this magneto shaft of *Stainless Steel* must stay on the job every second . . . to help make the trip “home” possible.

And there are some mighty good reasons why this shaft and many other vital plane parts are made of *Stainless Steel*. Withstanding thousands of RPM’s (for hours on end) demands high fatigue strength. Even before the plane takes off, Carpenter *Stainless* must combat corrosion from salt air. More important, *Stainless*

provides the strength/weight ratio that is so necessary on jobs like these.

Of course all of Carpenter is working on the double quick now—helping to win the war. And along with producing good steel, we are giving freely of our vast experience in solving problems concerning heat and corrosion resistance. We are helping manufacturers iron out production kinks, helping them get the most out of each pound of *Stainless*. Consider Carpenter your General Headquarters for fabricating and design information on *Stainless Steel*.

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PUT your tack-driving on a modern, accident-proof, waste-proof basis. Use the HANSCO T-1 One-Hand Tacker. First device of its kind to drive tacks! Drives into hard wood, thru thin metal or tin.

Does a wide variety of tacking and fastening jobs—wherever glues or tacks are used. Drives Hansen T-head Tacks in four lengths, 3/16" to 1/4". Holds strip of 100 T-head Tacks. Drives fast as you grip. Investigate!

ASK FOR FOLDER

A. L. HANSEN MFG. CO. CHICAGO, ILL.

field day" labor attitude keeping things in a whirl.

• **Symptomatic**—In the Barberton case, the labor board gave the union a 5¢-an-hour wage increase, after it had asked for a dime, and told it to content itself with the exclusive bargaining rights which it already had. But what stood out in the case was the kind of thing that is giving Washington labor officials nightmares, for, once again, wage adjustments had had to be made and labor trouble bought off while a perfectly valid collective bargaining contract was in full force and effect.

The A.F.L. union in Barberton presented its demands under a clause in that contract which provided for taking

up negotiations any time "unusual or special conditions arise." The "unusual conditions" cited this time were that the cost of living had increased in Barberton and was probably going to continue to increase; that the company paid lower wages than its competitors; that its earnings were excellent and it could well afford to pay the increase demanded. In support of the union-shop request, the union said that C.I.O. organizers were busy in Barberton, and union security was necessary to remedy an unsettled situation.

• **Induced to Mediate**—The company, which at first stood on the position that the only issue in the dispute was whether the year's contract signed last June "was worth the paper it's written on," was induced to mediate. While granting that it was able to pay higher wages, it maintained that such an argument was neither proper nor relevant. It denied that wages had failed to keep pace with the cost of living or that its rates were lower than those of its competitors. On the union-shop question its stand was an adamant "no."

An NWLB panel found that wages had, in fact, kept pace with the cost of living in Barberton to date and that even a projection of living-cost increases to next June, could be balanced by a 3¢-an-hour wage boost. On a comparison with going wage rates in foundries, machine and machine tool plants, and heavy equipment manufacturing, it found that B. & W. was about 3¢ out of line. It soon determined that there was no great need for union security and dropped that argument from consideration.

The company thereupon offered the union its choice of these alternatives: (1) a 3¢-an-hour wage increase to be effective until the contract expired next June; or (2) a 5¢-an-hour pay boost under condition that the contract be amended to run until next December. Both of these offers were rejected.

• **Settled—This Time**—The NWLB panel then proceeded to recommend a 5¢ boost, for the term of the present contract, telling the full board that it "was not unkindful of the fact that 'by the company's admission, the full 10¢ increase would not work undue hardship', and the board unanimously accepted the panel recommendations.

But now Babcock & Wilcox will start all over again, presenting briefs, arguments, and statistics as it contests the demands of C.I.O.'s United Electrical, Radio, and Machine Workers Union before another NWLB panel. If C.I.O. can squeeze better terms out of the company for Bayonne than A.F.L. got in Barberton, A.F.L. will be back in Washington, fighting to keep ahead of its competitor. Or unionists in the company's Alliance, Ohio, Beaver Falls, Pa., or Augusta, Ga., plants will be clamoring for the same terms.

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ANCHOR FENCE shuts out arsonists and saboteurs — regulates incoming and internal traffic

WITH spies and arsonists on the alert to sabotage defense production, it's time to protect your plant, equipment and personnel with a "wall of steel." That means an Anchor Fence around your plant—and special Anchor enclosures within your plant to keep unauthorized employees and visitors away from power stations, transformers, laboratories, chemical and material stocks, fuel supplies and other vital points.

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1892-1942 Fifty Years of Service



NATION-WIDE SALES AND ERECTING SERVICE

LA.'s Own War

Though anti-aircraft guns roar, the open-shop battle still rages, intensified by a series of rather noisy developments.

War or no war, the Los Angeles battle over the open shop goes on. Several hot rounds in this unending fight were fired late last month, about the time the anti-aircraft guns were echoing over the city. Some of these rounds (notably the belated report of the La Follette Senate Civil Liberties Committee on the activities of Los Angeles open shop groups) were of more value to historians than to current propagandists, but all the shots made a lot of noise.

● **A Blast by Radio**—The C.I.O. let off the first round by broadcasting over the radio the charge that the energetic and bedimpled Mrs. Edwin Selvin, head of the Women of the Pacific, a southern California consumers' group (BW—Feb. 1'41, p.38), "had been caught red-handed in a plot to colonize Los Angeles trade unions with stool pigeons." The charge was made during one of the "Our Daily Bread" programs which are sent over the air every night except Saturday and Sunday by the Los Angeles Industrial Union Council. These programs have been effective in rallying union support behind particular labor policies and in directing union pressure on employers engaged in contract negotiations.

The vivacious Mrs. Selvin aroused the ire of the C.I.O. by a letter in which she asked Los Angeles employers to suggest names of employees who might like to join her "Central Committee of Workers in Industry" to validate, at next November's referendum, California's law banning secondary boycotts. The so-called "anti-hot cargo act," which would greatly ease the task of defending the open shop, was passed by the state legislature but was held up by the unions' demand for a referendum vote.

● **"Subversive"**—Tom Brown, young C.I.O. broadcaster, told his listeners that Mrs. Selvin's proposal "would force workers, through employer pressure, to do stool pigeon work against the best interests of their fellow workers." He accused Mrs. Selvin of carrying on "a secret, subversive, fight" to disrupt the unions and said he "was sure no employer would give his money to such an arrangement unless he wanted to do his bit to help Hitler and the Japanese."

The next shot was fired at the open shoppers by the National Labor Relations Board when it ordered Morris P. Kirk & Son of Los Angeles to "disestablish the company-dominated Liberty Protective League, and upon request to bargain collectively with the C.I.O. In-

GIVE A THOUGHT TO THE CONVEYOR

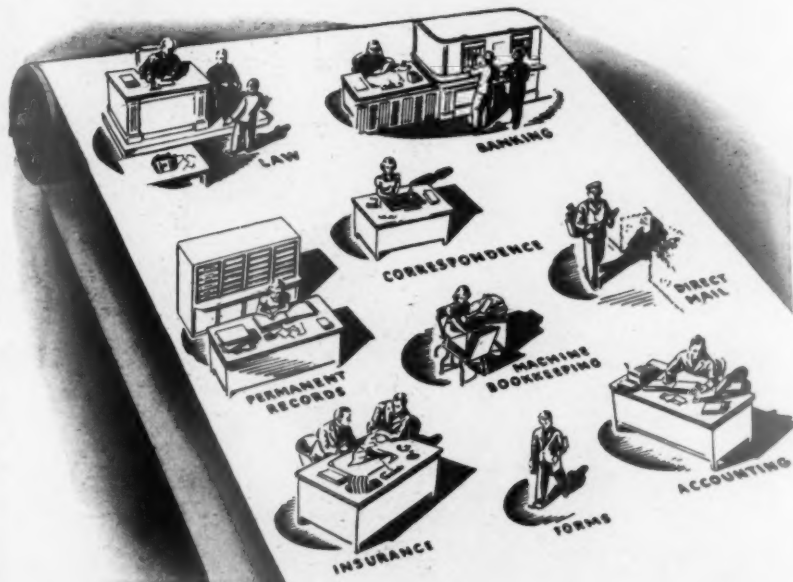
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ternational Union of Mine, Mill, & Smelter Workers, Local 468." The sting in the order was that it declared the company had "enlisted the aid of various organizations as part of a general plan to effectuate the open shop program throughout southern California."

• **Committee Reports**—The LaFollette Civil Liberties Committee issued last week a report on the "infringements on civil liberties" uncovered by it during an investigation of the Los Angeles open shop forces back in early 1940.

Specifically, the report charged the Associated Farmers of California with "the most flagrant and violent infringements," called the Los Angeles Chamber of Commerce "the dominating influence in perpetrating and enforcing an unchanging open shop policy in southern California," dubbed the venerable and tough Merchants & Manufacturers Assn. of Los Angeles "the fighting tool of the chamber of commerce which frequently resorts to strike-breaking devices." Espionage and the blacklist, said the report, were "specialized techniques of the organizations."

• **Old Stuff**—Most California observers were inclined to regard the LaFollette blast as fit only for the archives, since it

covered activities from around 1937 to 1939. M. & M. has made several shifts in policy since 1940 and has emphasized its service function rather than its crusading against the closed shop.

Last week the California Supreme Court, in an opinion on a 1939 action brought by Elm Oil Co., Long Beach, against the C.I.O. Oil Workers International, ruled that where picketing is violent, a trial court may issue an injunction prohibiting all picketing. "Labor has no sanctuary," said the ruling, "in any federal right when it departs from the bounds of peaceful persuasion and resorts to acts of violence, physical intimidation, or false statements."

MLB Folds Up

Organized to take charge of maritime labor problems, board failed because its powers overlapped other agencies.

There was one less labor agency in Washington this week as the Maritime Labor Board issued a final report to

Congress, sent its files over to the National Archives, and closed up shop. Thus ended the experiment of having a special board, provided for in the Merchant Marine Act of 1938, handle shipping labor problems. Congress had refused to extend the life of the board directing it to liquidate itself instead.

• **Why It Was Formed**—The board was originally created on the theory that shipping, like railroading, presented unique labor problems in which the public had a direct interest. It also exemplified the New Deal idea that there should be separate labor boards for separate industries.

As a dispute-settling body, it was handicapped by the fact that its duties overlapped those of the Department of Labor's Conciliation Service. In many instances its services were rejected by disputants. It had no powers to intervene save by mutual agreement.

• **One Real Job**—In other phases of its work it duplicated the National Labor Relations Board and the Bureau of Labor Statistics. The one exclusive function it performed was keeping on file collective bargaining contracts in the shipping industry.

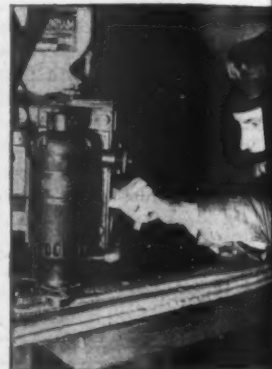
Throughout its three years of acti-



BRIGGS CONVERSION

Possibly 50% more workers than were employed in peacetime production of auto bodies at Briggs Manufacturing Co., Detroit, will be required to handle the firm's wartime output, which consists mainly of parts for fighter

planes and bombers. Production of war materials began at Briggs a year ago when plans were under way for complete conversion. Approximately 36,000 employees will be on the rolls when production gets into full swing at the company's seven plants like the one above where special welding ma-



chines for duralumin and power cutters for sheet aluminum (top, left and right) are operated by former auto workers. One of the auto production methods developed by Briggs is successfully used in touching-up, sewing and tacking of wings as they are carried on a conveyor (below).

service the board handled 195 disputes involving 187,912 employees. It achieved settlements in 154 instances. Seven disputes were not settled. Thirty-four were transferred to other agencies because disputants refused to acknowledge the board's jurisdiction.

• **Recommendations**—The major recommendations on shipping labor policy which it made in its final report are:

(1) That employee elections in the shipping industry be conducted by a Maritime Labor Board rather than by NLRB.

(2) That subsidies from the Maritime Commission should be made conditional on compliance with the Wagner Act.

(3) That the right to strike in home ports be protected and that bargaining rights on federally-owned ships operated by private companies be guaranteed.

(4) That voluntary adjustment boards should be established for arbitration on disputed interpretation of contracts.

• **Idea Is Intact**—The demise of the Maritime Labor Board does not mean that Administration policy has swung away from the idea of separate labor boards for separate industries. The MLB was never able to win enough labor and management acceptance to make it worth exerting pressure on Congress to preserve.

The idea of industry boards has its current expression in the stabilization agreements, one of which is operative in shipbuilding (BW—Apr. 19'41, p38), another in the tool and die section of the automobile industry (BW—Feb. 28 '42, p62) and others which are projected to cover aircraft and munitions manufacturing.

"Must" by NWLB

Labor board's first use of compulsory arbitration settles important "dilution" case by a policy-making decision.

Compulsory arbitration of labor disputes became an accomplished fact this week when the National War Labor Board ordered eight Cleveland employers acting as the "Steel Drop Forge Group" and the International Die Sinkers Conference, an independent labor organization, to sign a contract embodying the terms of an arbitrator's decision.

• **Dilution Problem**—The Group and the Conference had disagreed over a plan to increase production through the upgrading of unskilled labor and the dilution of the die sinkers' craft. The Conference objected that this would undermine its bargaining power and endanger its craft identity. The employers contended that dilution was made necessary by their expansion pro-



Portrait of a Dilemma*

*dilemma (dī-lēm'ā; dī-lēm'ā) n. an awkward situation; a difficult position or choice.

Like so many other executives, you are probably on the horns of *this dilemma*—

"How can I speed up production, using existing equipment?"

Well, here's one answer your plant engineers might give you. One that it will pay you to consider, too, for it is so simple that it is startling . . . yet so easy to accomplish that you can start in on it *today*:

Paint your walls and ceilings WHITE!

Listen to what a noted lighting engineer says on this subject:

"Scientific tests show that white interiors which have turned yellow . . . which are covered with dirt . . . or interiors which are unpainted . . . may reduce illumination as much as 60%, *slow down production 10% or more.*"

Translated into terms of present-day

production, doesn't this mean that clean, *white* ceilings and walls can be the direct cause of a 10% production step-up?

White paint's power to reflect light brings other important benefits as well. It stretches daylight . . . puts your lighting system on shorter hours . . . can raise its efficiency by as much as 50%. And it reduces fatigue, improves sanitation, cuts down accidents.

With these facts in mind, isn't a good white-paint job a "must" on your list of things to do to improve efficiency?

* * *

For more than 40 years, Barreled Sunlight has been a leader in the white-paint field. A trained Barreled Sunlight Representative will be glad to help you work out the most efficient, economical painting program for your plant. For details, write U. S. Gutta Percha Paint Co., 1-C Dudley St., Providence, R. I.

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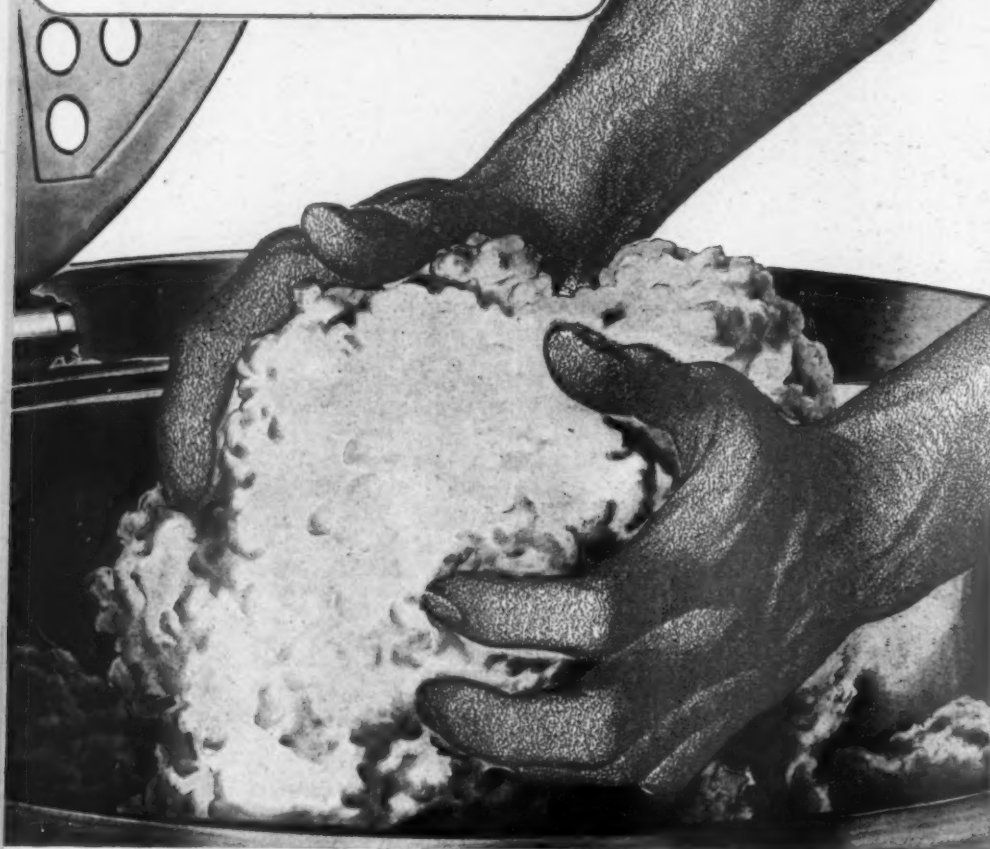


SUNLIGHT

White Paint for Industry

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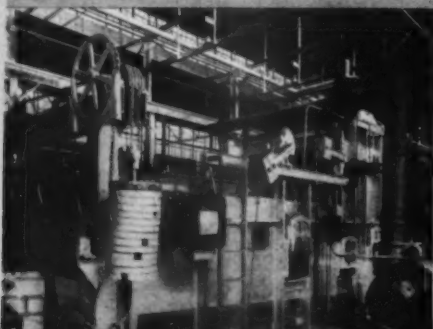
can maintain vital schedules!



Foxboro Temperature, Pressure and Flow Instruments give completely automatic control in airplane gasoline plants.



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HERE'S how more and more producers of vital war supplies are answering America's call for faster deliveries in spite of growing shortages in trained man power. At every critical production step involving temperature, pressure, humidity or fluid flow, they supplement their human operators with automatic Foxboro Measurement and Control Instruments that eliminate guess-work!

Thus, through simple installations, even highly exacting processes are now adapted to speedy, accurate handling by "green hands" with little training. "Old hands", too, can work with greater assurance . . . overall production is smoothly stepped-up to meet previously impossible delivery schedules!

Whether your production operations will be best served by instruments to record, indicate or control your processing conditions, Foxboro can supply the type you need and recommend installations to produce maximum results. Write for specific suggestions on the possibilities in your plant. The Foxboro Company, 120 Neponset Avenue, Foxboro, Massachusetts, U. S. A.

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MEASUREMENT AND CONTROL SYSTEMS

gram and the scarcity of sufficient skilled workers.

NWLB got the dispute and directed that it be submitted to Lloyd Garrison Dean of the University of Wisconsin Law School, as arbitrator. Garrison, what was, substantially, a vindication of the employers' position, held that both parties should sign an agreement under which the skilled work of making dies should be diluted with semi-skilled employees, leaving only the most responsible work to the fully skilled workers. However, to protect the craft, he provided that the semi-skilled workers should be classed as "temporary employees" and that the compromise made in the labor organization's standards should be canceled after the war. His award also establishes an apprenticeship system in accordance with the standards of the Federal Committee on Apprenticeship and mandates a 75-cent hour starting pay rate minimum for die room employment.

• **Setting Policy**—This decision on the increasingly important problem of die production is highly significant. It will come close to being government policy for mediators, conciliators, and WPB officials as they are called in on "craft protection" disputes.

As a precedent in procedure, the arbitration by order is even more important. To be sure, the labor board has the right to assert and enforce its opinion; it was never seriously challenged by the parties to this dispute. But the documents served on the disputants bristled with such phrases as, you are "directed," it is "ordered," etc. NWLB's attitude is clearly hardening; it is developing "compulsion psychology" unusual in an agency which has no statutory powers. And its future is likely to depend on its forcefulness in discouraging—outfacing—any challenge of its decision on cases in which disputants have shown an unwillingness to compromise.

N.A.M.'S STRIKE COUNT

The trend was toward more strikes during February. That's the conclusion of the National Assn. of Manufacturers from their spot-checking of newspapers for the month.

This survey constitutes the earliest available estimate on labor troubles each month. Inasmuch as time is required to put together a comprehensive count of strikes, the N.A.M. tally is admittedly incomplete, but it has the advantage of being a full month earlier than the Department of Labor's official reports.

In fact, the Labor Department figures for January were made public only last week. They showed 155 new strikes in the month—and the N.A.M. for the same period had tabulated 68. For February the association counted 103; that, if the ratio persists, the official total should rise to something like 230.

FINANCE

Weak Bonds' Day

Speculators switch from tax-depressed common stocks into wobbly rail liens, setting up divergent price trends.

People who try to ascribe the actions of the markets solely to the war news are overlooking another equally basic factor—taxes. It's true that reverses in the Far East have proved bad for stocks. Yet speculative bonds have been going up pretty briskly recently (chart below), which clearly indicates a stock-to-bond switch of major proportions which can be ascribed only to tax considerations.

• **What New Tax Plan Did**—Beginnings of the Wall Street exodus from vulnerable industrial stocks to second-grade railroad bonds were noted some time ago (BW—Jul. 13 '40, p. 42). But taxes burst into especial prominence as a market factor last week when Secretary of the Treasury Morgenthau asked Congress for the largest tax schedule in the history of the United States (page 14). Industrial-stock prices, which have been weakening since early January, immediately slid off precipitously.

This week the industrials recorded another new low since 1938 and utility stocks sold at the lowest prices in their history. On Monday, 76 industrial stocks listed on the New York Stock Exchange dipped to new low prices for the year. A major factor is that corporations will have to turn over to the

government a much larger share of their income and will retain far less for dividends and surplus. As a consequence, equities of those companies whose dividends seem secure naturally have held up better than those in a vulnerable position.

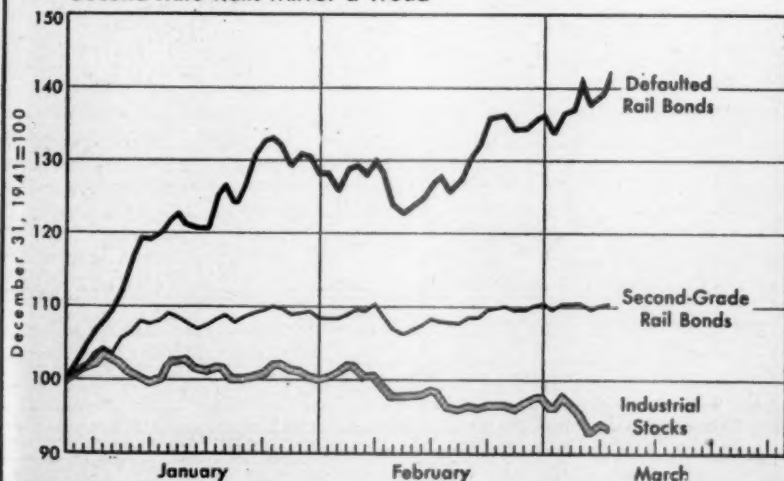
• **Rail Stocks Do Better**—Price averages of railroad stocks are now slightly above their year-end levels. Most of these stopped paying dividends early in the depression; so holders are accustomed to foregoing income on these equities. Excess railroad income is expected to go into reserves; accordingly the stockholders aren't holding any strong anticipation of disbursements for the early future.

But, as will be seen from the chart, the price averages of second-grade and defaulted railroad bonds have been putting on a real show. Second-grade rails are those which often did not earn enough to pay their full annual interest bill but, nevertheless, paid interest from surplus. Most are now covering interest requirements by a healthy margin, retiring or reducing Reconstruction Finance Corp. credits or bank loans, and buying in their earliest-maturing or highest-interest-bearing fixed debt (all of which of course shoves the remaining bonds into a more favorable position).

• **Stock vs. Bonds**—These second-grade rail liens occupy the position of having much the same speculative appeal as common stocks while they don't share the tax vulnerability. They're selling far enough below par so that there isn't the call-price to impose any nearby ceiling over an advance. And, above all,

WISE MONEY SAYS "BONDS"

Second-Grade Rails Mirror a Tread



Data: Dow, Jones and Co., Standard and Poor's Corp.

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LOEW'S INCORPORATED

"THEATRES EVERYWHERE"

March 6, 1942

THE Board of Directors on March 4th, 1942 declared a dividend at the rate of 50c. per share on the outstanding Common Stock of this Company, payable on March 31st, 1942 to stockholders of record at the close of business on March 20th, 1942. Checks will be mailed.

DAVID BERNSTEIN,
Vice President & Treasurer

Beneficial Industrial Loan Corporation

DIVIDEND NOTICE

Dividends have been declared by the Board of Directors, as follows:

PRIOR PREFERENCE STOCK

\$2.50 Dividend Series of 1938

62½c per share

(for quarterly period ending March 31, 1942)

COMMON STOCK

40c per share

Both dividends are payable March 31, 1942 to stockholders of record at close of business March 16, 1942.

E. A. BAILEY

March 2, 1942

Treasurer

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Then Cleveland's oldest bank can help you—

★ in handling your banking transactions

★ in financing your war production

Our officers are in close contact with Cleveland industry. One of them will be glad to assist you.

We have been located for 97 years in one of the world's greatest industrial areas. Now—as during other wars—our experience and our financial resources are at the disposal of our country . . . backing her great war production effort 100%.

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NATIONAL CITY BANK
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EUCLID AT EAST SIXTH
&
TERMINAL TOWER BLDG.



MEMBER FEDERAL DEPOSIT
INSURANCE CORPORATION

there is the fact that interest is paid on bonds before computation of taxes whereas stockholders may merely divide what is left after bondholders and the Collector of Internal Revenue get theirs. A minor advantage, but one that weighs with in-and-out speculators, is that brokerage commissions and transfer taxes on bonds are substantially lower than on stocks.

Defaulted railroad bonds also have attracted attention. These liens represent debt of carriers that are in the process of reorganization on a sounder financial basis. Volume in these securities has been rising as traders switched funds from liquidated industrial equities into these liens. Buyers fully expect the principal amount of their holdings to be scaled down in reorganization, but they still see good chances for profit at these levels.

The comparative freedom from heavy tax liability and the expectations for enlarged traffic and revenues (likely to be translated into better treatment for bonds in reorganization plans) heightened the desire of speculators to acquire these prior claims on earnings.

Security Price Averages

	This Week	Month	Year
	Week Ago	Ago	Ago
Stocks			
Industrial	81.6	86.1	86.0
Railroad	26.5	27.8	27.7
Utility	31.0	33.1	34.0
Bonds			
Industrial	106.0	106.7	107.0
Railroad	88.2	87.8	86.7
Utility	101.6	103.6	104.7
U. S. Govt.	110.1	109.4	109.3

Data: Standard & Poor's Corp. except for government bonds which are from the Federal Reserve Bank of New York.

COMMODITIES

Cotton for War

Department of Agriculture asks farmers to increase their plantings by 4,000,000 acres, to grow longer staple.

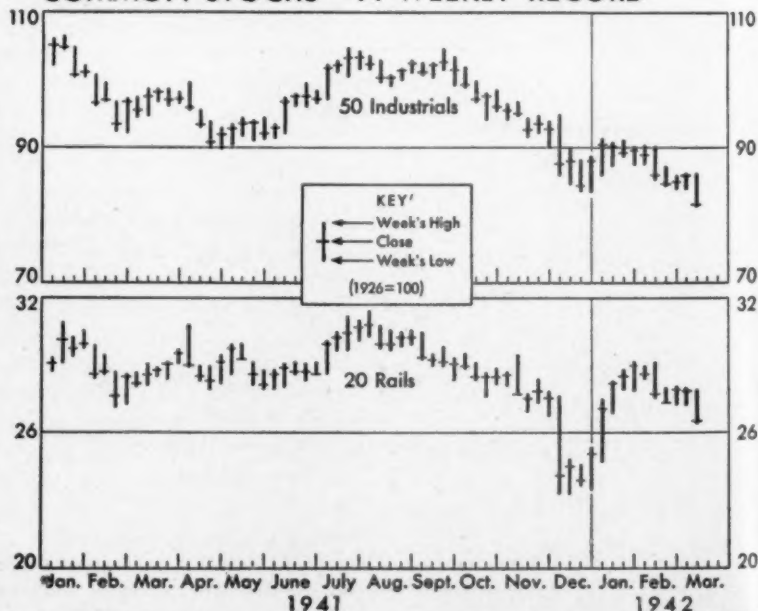
Cotton planting in 1942 will be geared to war needs. This will arise partly from a 4,000,000-acre boost in planting and partly from higher loans on long-staple cotton to encourage growth of this more expensive type.

● **Goal Tops 13,000,000 Bales**—Last week Secretary of Agriculture Claude Wickard appealed to this nation's 2,500,000 cotton farmers to plant their full acreage allotment totaling 27,400,000 acres in 1942. In 1941, growers underplanted, because of a variety of inducements, by more than 4,000,000 acres, and produced only 10,976,000 bales. If the yield maintains the 1936-1940 average of 235 lb. per planted acre, the program should result in a crop this year of about 13,500,000 bales.

The National Cotton Council a week earlier had urged Wickard to take this action and pointed out, that, of the 5,000,000 bales now owned by the Commodity Credit Corp., 1,000,000 have been pledged for export under lend-lease and the remaining 4,000,000 are low grade and short staple. Another 2,200,000 are in hock for CCC loans.

● **Crop Hazards**—With domestic con-

COMMON STOCKS — A WEEKLY RECORD



Data: Standard & Poor's Corp.

1942
BUSINESS WEEK

sumption running up to a record of 11,000,000 or 12,000,000 bales, a short crop could conceivably result in a shortage of good-quality cotton. Southerners who want acreage restrictions lifted argue that a short crop would not be altogether surprising this year. The supply of fertilizer, they insist, will be inadequate, and the farm-labor supply almost certainly will be short. Planes and pilots for boll-weevil dusting may not be obtainable, and ground equipment for insect poisoning is scarce.

Aside from the lint needs, more cotton production is also desirable from the angle of its by-products. From the seed of each 500 lb. bale is derived 400 lb. of meal for fertilizer and stock feed, 225 lb. of hulls for fodder, 146 lb. oil from which margarine, shortening, soap, glycerin, etc., are made, and 77 lb. linters, vital for making explosives.

To encourage growth of longer-staple cotton, the Department of Agriculture last month announced that loan premiums were to be increased on staples 1½ in. and over (American upland cotton) to enable producers to realize the same per acre return from longer cottons which have low yields as from shorter cottons which generally bear heavier.

• **Relation to Parity**—The rate applies to both rain-grown and irrigated cotton. Loan rates, it should be remembered, are fixed each year for each staple and grade of cotton and are added to or subtracted from 85% of the prevailing established rate of parity. Today parity is 18.23¢ a lb.

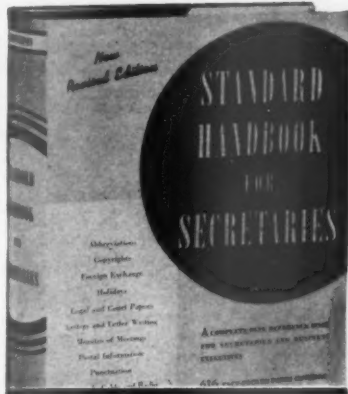
This was one of the most important cotton policy changes since the inauguration of AAA. To the entire Cotton Belt it meant that, from now on, seed planted would be governed by anticipated staple needs of cotton mills instead of the greatest per acre lint yield for the farmer, but that, regardless of staple planted, farmers would receive equitable acre returns.

• **Encouraging Other Types**—In addition to the upland long-staple loan program, the Department of Agriculture is requesting planters of American-Egyptian and Sea Island cotton to increase acreage as far as available planting seed will permit. The Commodity Credit Corp. will protect, by a purchase plan, American-Egyptian staples 1½ in. or longer on a basis of 35¢ a lb., U. S. grade No. 1, with commensurate prices on lower grades, and Sea Island, 1½ in. or longer, on a basis of 36¢ a lb., U. S. grade No. 2.

Although the rates apply to the entire Cotton Belt, influence of the new loan rates will be felt most importantly in that area of the agricultural South known as the Delta. That section is now preparing to put at least 80% of its acreage into domestic long staple for the first time in many years.

• **\$11,000,000 Bonus**—To the Delta the announcement meant an average in-

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creased income for 1942 of \$18.50 an acre on long staples, or roughly \$11,000,000 on the 80% of the acreage to be planted to "war staples." To the spinning mills and the government it meant that the long staple upland crop would be increased by at least 450,000 bales (weather and boll-weevil permitting) and that government textile needs would continue to flow as required.

This baleage, although a 50% increase over last year's long-staple crop, is approximately 200,000 bales short of the government's estimated 1942 needs. This, in turn, is due to the shortage of long staple seed—a result of previous years' decreased planting.

● **Delta's Advantage**—The rich Mississippi Delta land is the only section of the Cotton Belt physically capable of producing rain-watered upland long-staple cotton—cotton 1½ in. and over. The Delta was pioneered, developed into a lushly cultivated area, and became rich through its ability to produce long staples which commanded high premiums and were in great demand by mills making extra quality goods.

Since 1933, however, there has been a steady decrease in acreage given to long staples. The underlying causes for this were: (1) the AAA acreage-curtailment program which cut the acreage planted to cotton and impelled Delta planters to put their land in shorter staples which produce more lint (and return) per acre, and (2) the depressed cotton goods and raw cotton market.

● **Change in Plantings**—Prevailing prices on cotton 1½ in. and longer have not, since 1930, justified the traditional all-long-staple cotton planting program that had been the Delta's heritage. The result was that, although in 1930 fully 98% of the Delta's acreage was planted in long staples, in 1940 at least 46% was planted to cotton under 1½ in.

With the inauguration of the defense program and increased government textile procurement, on which quality specifications indicated need for long staples, an increasing shortage of long staples was evident. Mills clamored for the Delta to change its planting program to include a greater acreage percentage of the long staples.

● **Where the Money Was**—But research on the part of two astute and practical cotton economists, Homer McNamara, director of the Delta Experiment Station, and C. C. Smith, now assistant director, cotton division, Commodity Credit Corp., proved that the most dollar return per acre was from cotton 1½ in., and all staples above and below showed a loss of from \$12.34 to \$23.94 an acre. The heaviest per-acre loss to the planters was on 1½ in. staple—that most needed in government work. Obviously, Delta planters could not take the losses involved in a changed planting program for over a million acres unless a sweetener was provided.

THE TRADING POST

To "Convert" the Auto Dealers

Fred A. Carleson, automobile dealer of Salt Lake City, submits an idea designed to put the automobile dealers to work on the war effort. But let him tell it in his own words:

There is a demand for trained workers by the Army and Air Corps and by those producing war materials, airplanes, tanks and trucks. I am sure that over 75% of our skilled mechanics and machine maintenance men in the transportation industry have been developed from the automobile repair and service department. If the best of the 44,000 dealers could be selected to enter into a training program, I am sure that the Army and Air Corps as well as the manufacturing industries could be furnished with better trained men in ever increasing numbers.

Suppose we divide the United States into zones similar to the automobile distributing system. In each one of these zones the government would enter into a contract or take over one or more dealer establishments. These would be converted into central training centers, where recruits from the Army and civilian life would be given about a four weeks' course in the fundamentals of welding, electrical work, radio repairs, metal work, motor overhaul, tune-up and any other detail operation that applies to motorized equipment.

Each of these central training stations or zone headquarters would organize all the properly equipped dealers in its area, particularly those who could qualify to receive these apprentices in their shops after they had the training course, where they would remain for a period of, say, six months. These men could be detailed to specialized training courses or general maintenance work. In this matter they would get complete instruction under practical conditions. After they had completed this course, they would be turned back to the recruiting center with a report as to their fitness.

During the period of preliminary training and also while they were serving their apprenticeship, they could be carefully watched and guided into the proper field and it could be quickly determined whether or not they would be able to adapt themselves to mechanical work. Each seasoned mechanic in a well set up dealer organization could take charge of three apprentices.

The central training station could be operated under contract by an individual or firm or could be taken over by the government, and the dealer organization under the zone area would be paid a weekly or monthly fee for each apprentice assigned to it.

• • •

It is assumed that a plan could be worked out to coordinate this effort with the military set-up and at the same time make it possible for industrial plants under the Army to draw on this man power as well.

There is a tremendous power-house of brains in the automobile industry that is at sea, not knowing what it can do. I am sure that upon this thought can be built a pro-

gram whereby essential transportation can be maintained and, at the same time, these men could be producing trained man power for the mechanized forces and help to accomplish the huge production job that is ahead of this nation for the next few years.

Furthermore, I can see no reason why all government agencies should not direct their cars and trucks to these stations for repairs.

The various defense manufacturing plants as well as the Army and Air Corps seem to find it profitable to make attractive offers to the automobile dealers' mechanics as fast as they are trained. It would seem then that the dealers should go into the business. This plan would make it possible for every dealer to keep a reasonable number of first-class mechanics to take care of the essential transportation of the nation and at the same time use them as instructors to produce mechanics and maintenance men in large numbers for the Army.

The automobile dealers can, if given a chance, perform a great service to this nation in addition to maintaining the essential transportation of the country, which will be absolutely necessary to keep up our efficiency. While doing that they can train the thousands of men that will be needed to maintain the Army equipment as well as produce it.

Distributors Take in Sail

The following is from a letter I have from a general sales manager of a large eastern manufacturer of electrical appliances. He has recently returned from a tour of the country amongst his distributors:

All of our distributors, who are large distribution outlets of electrical appliances, realize that most of the items that they distribute will be cut drastically during 1942 and that it is important for them immediately to reduce their overheads and prepare to operate on a reduced volume.

Our distributors, who stand today in a very strong financial position, are taking this rapid change in their stride without confusion, taking immediate steps to effect economies in their organization.

They are much disturbed over the mortality of small appliance dealers and are arranging to offer suggestions looking to economies that would help their important key retail companies to survive under reduced volume. Moreover, we as a company have arranged for competent financial men to visit our distributors in an effort to insure that they receive every possible financial advice to conserve their strength for the post-war period.

Practically all our major distributors have appointed committees to look out for special lines that they can distribute—lines that will not be affected too greatly by the war program. Many of these key distributors have been working along this line for many months and are meeting with some success. All the distributors seem to be concerned over their high accounts-receivable condition and are being very cautious from the standpoint of term extensions. W.C.

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THE TREND

THE SALES TAX DILEMMA

In his tax testimony before the House Ways and Means Committee, Secretary of the Treasury Morgenthau declared that the Revenue Act of 1942 "must help to check inflation" by "withdrawing the greatest possible volume of purchasing power" from ultimate consumers. But one of the most common criticisms of the Treasury's proposals is that they fail to do that. Though income-tax rates in the middle-income brackets and corporation rates are boosted sharply, the increases do not touch the great bulk of workers and farmers. Yet it is in this group of persons earning \$2,500 a year or less that the big rise in buying power has taken place, as the following table indicates:

	Farm-Labor Income	Other Income	Total National Income
Aug., 1939	\$53,800,000,000	\$17,900,000,000	\$71,700,000,000
Jan., 1942	79,500,000,000	21,700,000,000	101,200,000,000
Increase	\$25,700,000,000	\$3,800,000,000	\$29,500,000,000
	47.8%	21.2%	41.1%

• **Two facts are worth noting:** First, that farm-labor income comprises 75% of all income; second, that of the \$29,500,000,000 increase in national income, \$25,700,000,000, or 87.1%, went to the farm-labor group. Only \$3,800,000,000 went to business men, professional men, owners of corporations, bondholders, landlords, promoters, etc. And that explains the agitation for a tax to get at the incomes of the so-called "little man." Because of increased wage rates, longer hours, and higher farm prices, he has been a principal beneficiary of the war effort. Therefore, it is reasoned, why not tax him on his gains?

It is not easy to get at those gains by lowering exemptions. The principal effect of that procedure is to raise the taxes of persons in the income brackets immediately above. Suppose, for instance, you lower the exemption for single persons from \$750 to \$500. Only a very small amount would be collected from the new taxpayers. But the tax on a man with \$1,000 income would be doubled. He'd have to pay on \$500 instead of \$250. And, of course, this would not get at the big group below the exemption levels.

• **But nobody escapes a general sales tax.** It reaches out for rich and poor, both. However—and this is the objection commonly raised against it—it hits persons with low incomes harder than persons with high incomes. Consider what happens to a man with a \$1,000 income versus one with \$10,000 income. Suppose you have a 5% sales tax. Usually, the man with \$1,000-a-year income spends everything he earns, and largely on the necessities of life—food, clothing, and shelter. So his tax would amount to \$50, or a full 5% on earnings. But the \$10,000-a-year man would save part of what he earns, say \$2,000. Thus, his tax would come to \$400, or only

4% of his income (5% on the \$8,000 he spends). That's why sociologists call sales taxes "regressive." Their impact is heaviest on those who are forced, by sheer needs of sustenance, to spend the greatest percentage of what they make.

• **However, in wartime, the sales tax has an important point in its favor.** Unlike the income tax, it is instantaneous in its incidence. For example, this month in the United States, we are going to pay taxes on last year's income. Yet, most of the income on which the taxes are being paid, has already been spent. But with a sales tax, the levy is paid as income is earned (since most persons spend a large portion of their incomes on, or shortly after, receipt). Thus, with a sales tax, you do not have the lag between rising incomes and taxes; hence, tax payments can keep pace with wage boosts, increased employment, or price advances. And this is a real attribute in trying to check inflation.

Yet, regardless of the type of sales tax used—whether a tax on gross turnover, or value-added, or manufacturers' and wholesalers' sales, or purchases at retail—there's no escaping one fact: the immediate effect is to raise prices, hence the cost of living. And it is on that basis, that the Office of Price Administration opposes such a levy. The theory is that if prices go up, workers immediately will begin demanding increased compensation to offset the instantaneous rise in the cost of living. And that would tend to start the inflation spiral on another upward whirl.

• **In the final analysis, the Revenue Act of 1942 cannot solve the country's inflation problem;** \$9,600,000,000 in new taxes are not enough to do it. The Treasury and OPA will still be up against this all-important, economic impasse: that the country's purchasing power is on the increase while the supply of civilian goods is on the decrease. Thus, sales tax or no sales tax, there will still be an excess of purchasing power. And that is what Congress must take into account.

A sales tax would cut down spending of persons in the low-income groups who tend to spend most of what they earn, which, economically, is what we want. On the other hand, it would stimulate demands for higher wages, which, economically, is exactly what we don't want. But there's still more to the dilemma. Congress must also consider the social and political aspects of this question: Where does it want this excess purchasing power to reside—in the upper- or lower-income groups? In short, who is to do the buying? And, as a corollary, who is to pay the taxes? It's a tough problem. Particularly since it gets right down to where the votes are.

The Editors of Business Week

Business Week • March 14, 1942

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